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ABSTRACT

In Nepal, Girls' and Women's Education Initiative and the Girls' and Women's Education Policy Research Activity (GWE-PRA) investigated the impact of women's integrated literacy programs in the country's development by examining measures of socio-economic status, as well as indicators of women's social and economic development, including" (1) literacy and education; (2) children's education; (3) family and reproductive health; (4) participation in income-earning activities; (5) community participation; and (6) political participation. This research presents cross-sectional comparative analyses of these indicators in the baseline year (or Year 1) and measures changes in the indicators over a period of three years. Two integrated literacy programs were examined: (1) Basic and Primary Education Project (BPEP); and (2) the Health Education and Adult Literacy (HEAL) Program. Research design used quantitative and qualitative data. Quantitative data were collected annually for three years from an experimental and a control group chosen from the Terai region. Survey data were collected from more than 1,000 women entering one of the two integrated literacy programs. The same women were followed for 3 years through an annual survey. Research sought to determine the extent to which persistence in literacy classes differed by program, previous literacy classes, age, language spoken at home, socio-economic status, and district. Findings revealed that women in the HEAL program had significantly higher levels of literacy class participation than women in BPEP. Age also appeared to be a factor affecting persistence in the program. Experimental group women had a significantly higher mean socio-economic status (SES) composite score than women in the control group. Three policy implication factors are identified and discussed. Additional information and data are appended. (Contains 103

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A Longitudinal Study of the Effect of Integrated Literacy and Basic Education Programs on Women's Participation in Social and Economic Development in Nepal

December, 2002

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A more extensive list of those who played a role in carrying out this research is provided in Appendix 1

ACRONYMS

BPEP	Basic and Primary Education Project
CBS	Central Bureau of Statistics
CERID	Centre for Educational Research Innovation and Development
CEDPA	Center for Development and Population Activities
CMC	Class Management Committee
FCHV	Female Community Health Volunteer
GER	Gross Enrollment Rates
GWE-PRA	Girls' and Women's Education Policy Research Activity
HEAL	Health Education and Adult Literacy
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
ICIMOD	International Center for Integrated Mountain Development
INGO	International Nongovernmental Organization
JSI	John Snow, Inc.
JHU/PCS	John Hopkins University/Population Communication Services
LEA	Language Experience Approach
MP	Minister of Parliament
MOE/N	Ministry of Education/Nepal
NESP	National Education System Plan
NFE	Nonformal Education
NFHS	Nepal Family Health Survey
NGO	Nongovernmental Organization
NMIS	Nepal Multiple Indicator Surveillance
PRA	Participatory Rural Appraisal
REFLECT	Regenerated Freirean Literacy through Empowering Community Techniques
SES	Socio-Economic Status
STI	Sexually Transmitted Infections
SOWN	Status of Women in Nepal
TAF	The Asia Foundation
TBA	Traditional Birth Attendant
VAD	Vitamin A Deficiency
UNESCO	United Nations Educational Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
UNAIDS	Joint United Nations Program on HIV/AIDS
USAID	United States Agency for International Development
VDC	Village Development Committee
WDD	Women's Development Democracy
WEEL	Women's Economic Empowerment and Literacy
WEP	Women's Education Program
WHO	World Health Organization

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EXECUTIVE SUMMARY

A Longitudinal Study of the Impact of Integrated Literacy and Basic Education Programs on Women's Participation in Social and Economic Development in Nepal

The Goals and Purposes of the Girls' and Women's Education Initiative and the Girls' and Women's Education Policy Research Activity (GWE-PRA)

Prompted by strong evidence of the impact of girls' primary school completion on developing countries' long-term social and economic development, United States Agency for International Development (USAID) launched the Girls' and Women's Education Initiative in 1995 to spur rapid further advances in girls' and women's education. The Girls' and Women's Education Policy Research Activity (GWE-PRA) has conducted studies in five countries: Peru, Benin, Bolivia, Honduras, and Nepal. Studies in Peru (Chung, et al., 2000) and Benin (Gohoung, 1998), carried out through World Education, focused on constraints to girls' education and made recommendations for policy reforms to overcome these constraints.

The primary objective of GWE-PRA studies in Bolivia (Burchfield, Hua, and Suxo, and Rocha, 2002), Honduras (Burchfield, Hua, and Brown, 2002) and Nepal, which were carried out by World Education in collaboration with Harvard University's Graduate School of Education and the Education Development Center, was to determine the impact of women's integrated literacy programs on women's social and economic development. Findings from this research are expected to help planners at the national level and in international assistance agencies make more informed decisions about [illegible] allocation of program resources. In addition, findings may help the private and public sectors develop more appropriate programs tailored to women's development needs. Although activities in each of these countries had different modes of delivery, different target audiences and were at different stages of development, they shared a common purpose. All programs in the three countries where the longitudinal studies were conducted aimed at increasing the literacy skills of women through nonformal basic education.

Girls' and Women's Education Policy Research Activity in Nepal

In Nepal, GWE-PRA investigated the impact of women's integrated literacy programs on the country's development by examining measures of socio-economic status, as well as indicators of women's social and economic development, including: 1) literacy and education, 2) children's education, 3) family and reproductive health, 4) participation in income-earning activities, 5) community participation, and 6) political participation. This research presents cross-sectional comparative analyses of these indicators in the baseline year (referred to throughout this document as Year 1) and measures changes in the indicators over a period of three years. The study examined two integrated literacy programs: the Basic and Primary Education Project (BPEP) and the Health Education and Adult Literacy (HEAL) program.

Research Design

The GWE-PRA Nepal research design consisted of both quantitative and qualitative data collection. Quantitative data were collected once a year for three years from an experimental and a control group chosen from the Terai (the southern flatlands of Nepal). Survey data were collected from more than 1,000 women entering one of the two integrated literacy programs. The same women were followed for three years through an annual survey. Year 1 data (which served as the baseline) were collected within two to four weeks of the beginning of the literacy classes in which women in the experimental group were enrolled. These programs included: 1) BPEP, which is run by the Nepali government, with funding from several organizations, including the Royal Danish Embassy, the World Bank, UNICEF and Norad; and 2) the USAID-funded HEAL program, managed by World Education. Responses of women participating in these programs were compared to those of women in a control group of non-participating women.

A sub-sample of 20 women (16 from the experimental group and 4 from the control group) were interviewed at intervals over the three-year period to provide more in-depth, qualitative information about the women, their families, and the communities in which they reside.

To address the limitations posed by self-reporting, the design incorporated a number of methods of "triangulation." Responses to selected questions, such as whether the women had previously participated in a literacy class, were cross-checked by asking the same questions to other family members and members of the community. Discrepancies between sources were reported, thus providing the reader with additional information on which to assess the validity of the responses. Additionally, husbands were interviewed to obtain family background and demographic information.

Methodology

The sample examined in this study included women participating in two integrated literacy programs: HEAL and BPEP, as well as those in a control group who were not participating in any literacy program. By assessing the impact of participants' knowledge, attitudes and practices related to selected indicators of women's social and economic development, we can infer that such programs, if implemented on a wider scale, would ultimately result in changes within the larger society.

By comparing participants' results with those of a random sample of women in similar circumstances who did not participate in the programs, we were able to identify the effects of the program intervention on the indicators examined. We would expect that if the programs have an impact, then the larger the program area, the greater the impact would be nationally. Examining a random sample of women who participated in an integrated literacy program enables one to reasonably infer that if the sample is representative, women participating in the same programs in other parts of the country would demonstrate similar results.

Specific indicators examined in this study were the following:

1. Literacy/education level;
2. Health knowledge and practice;
3. Participation in income-earning activities;
4. Political awareness and participation;
5. Community participation; and
6. Children's education.

This study employed the use of "proxy" measures that rely primarily on self-reporting to estimate changes in behaviors and practices. The pre- and post-experimental and control group research design allowed for making reasonable inferences about the attribution of changes to the programs under examination. Although such measures provided an estimate of changes, constraints posed by the use of self-reporting measures must be borne in mind.

Hypotheses

The overall research goal was to determine the impact of the integrated literacy programs on women's social and economic development. The underlying assumption was that improving women's social and economic development ultimately leads to increased development in the country.

This study examined factors contributing to women's persistence in literacy programs and tested three hypotheses concerning the impact of integrated literacy programs on development. These hypotheses focused on respondents' awareness (knowledge and attitudes) and behavior (practice and skills).

1. Women who participate in women's integrated literacy programs *are more aware* of health and reproductive health issues, political affairs and the importance of children's education than they were prior to participating in the program and in comparison to women who do not participate in the programs.

2. Women who participate in integrated literacy programs *are more likely to participate* in income-earning activities, political elections, their children's education and community activities than they were prior to participating in the programs and in comparison to women who do not participate in the programs.

3. Women who participate in women's integrated literacy programs have greater literacy skills than they did prior to participating in the programs and in comparison to women who do not participate in the programs.

Research Sites

The study was conducted in the Terai region of Nepal. One reason for conducting this research in the Terai was that, since 1997, almost all USAID-sponsored literacy programs have been in this region. The second reason was that the study intended to assess the impact of two of the largest integrated literacy programs, and it was necessary to select areas in which both programs were in operation at the time the study began.

Characteristics of Women in the Sample

Women in both the experimental and the control group were similar with respect to a number of personal and family characteristics. In Year 1, the mean age in both groups was the same (31.4 years of age). However, on average, women in the control group had significantly more children (3.3) than women in the experimental group (3.0), despite the earlier age at which experimental group women married.

The official language in Nepal is Nepali, although over 35 distinct languages are also spoken. The GWE-PRA sample consisted of nearly equal percentages (50%) of Nepali and non-Nepali speakers in the experimental group, but a significantly smaller proportion (35%) of women in the control group women were Nepali speakers.

Nepal is a Hindu kingdom, and officially over 86% of its population follow the Hindu religion. Of the total study sample, 93.1% were Hindu, and about 3.2% were Muslims. The others were Kirati (1.8%), Buddhists (1.1%), and Christian (0.8%).

The three castes/ethnic groups most represented in the sample were Tharu (21.9%), Brahmin (17.5%) and other hill natives (13.1%). More than 30 castes/ethnic groups were identified in the survey. For analysis purposes, some castes were grouped into categories similar to those used by the 1991 National Census.

A composite measure of respondents' socio-economic status (SES) was calculated. Experimental group women had a significantly higher mean SES composite score (5.67) than women in the control group (4.64) in Year 1. However, the mean score for both groups was less than 6.5 in Year 1 (the mid-point on the composite scale).

FINDINGS

Persistence in BPEP and HEAL Programs

Several factors contributing to women's persistence in the BPEP and HEAL programs were examined. More specifically, the research attempted to determine the extent to which persistence in literacy classes differed by: 1) program, 2) previous literacy classes, 3) age, 4) language spoken at home, 5) socio-economic status, and 6) district.

Women in the HEAL program had significantly higher levels of literacy class participation than women in BPEP. Their program affiliation explained about 7.4% of the variance in the level of literacy class participation. An additional 3.4% of the variation was explained by SES, language and previous literacy class participation. However, additional research is needed to identify other factors responsible for women's persistence in the programs.

Women's age appeared to be a factor affecting their persistence in the program. Regression analysis revealed that for each increase of one year in participants' age at baseline, we can expect an increase of .02 units in the literacy class participation ratio.[1] This represents an increase of about five to nine hours in the basic-literacy class (depending on whether participants are in the HEAL or BPEP program) or from three to six hours in the post-literacy class.

Overall Social and Economic Development

A 35-point index was constructed to measure the outcome construct, women's social and economic development. The index was compiled by applying a series of "sensitivity analyses" of testing variables' contribution to the *alpha* level of the overall measure of the outcome. Four specific areas of indicators were selected for the index: 1) income-earning activities, 2) women's health and reproductive health, 3) political participation, and 4) community participation. Additionally, a multivariate model was constructed to determine whether the integrated literacy and basic education programs had a significant impact on women's social and economic development taking into consideration the effects of other factors, such as women's household SES, age, and time factors.

Analysis of the model revealed that, on average, considering all other significant factors, a woman who participates in and completes one of the two programs (HEAL or BPEP) is estimated to gain 13 percentage points more in the index of women's social and economic development than a woman who does not participate. Even a woman who is likely to drop out later is estimated to gain 5.7 percentage points more than a woman who did not participate at all.

In summary, the results clearly confirmed that women who participated in the integrated literacy and basic education programs in Nepal showed a larger improvement in their index score than women who did not participate in the programs. The net gain (13 percentage points) of the participants over non-participants, considering all other things equally, indicates a significant investment return and would translate into other positive effects on children's education, local economy, and social capital for the country. Hence, we recommend continuing support for such programs.

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[1] The level of respondents' participation is a ratio calculated by dividing the number of months each respondent completed each year by the total number of months required to complete the program in which they were enrolled. This ratio was summed across the three years to provide a measure of total participation over the three years. This ratio was used instead of actual number of months of participation because the programs are structured such that six months of HEAL is considered to be roughly equivalent to nine months of BPEP.

Program Costs

What is the cost of achieving this 13-point gain in the social and economic index? It is estimated that it costs $500 to train 28 women (classes range from 25-30 women) for 580 hours in Nepal (6 months basic plus 3 months post). This amounts to $24 to train 28 women for one hour (or about $0.03 per person per hour). It includes facilitator salary, per diem, basic material costs, basic transportation, management & support staff, and maintenance and utility costs. To train 20,000 women for 580 hours of instructional time, it would cost about $357,142. Thus, investing a relatively small amount of money can lead to fairly large gains in social and economic development.

Implications for Policy

1. The GWE-PRA research has provided empirical evidence that the integrated literacy and basic education programs have a significant impact on women's social and economic development. The 13 percentage-point gain on the composite index used in this study to measure women's development is the result of:

   ? more than two decades of developing, testing and refining locally relevant curriculum materials;
   ? effective training programs; and
   ? support from the international donor community.

   Therefore, it is that essential continuing a strong support, commitment and effort be provided for these integrated literacy and basic education programs.

2. GWE-PRA research results revealed that areas of indicators in which the two programs have made substantial investment of resources (time, program focus, and training) have resulted in significant gains in women's social and economic development. Therefore, it is recommended that Government, donors, and NGOs prioritize their goals and target resources toward achieving these goals.

3. In examining factors contributing to the 13 percentage-point gain in social and economic, we found that certain areas of indicators were not sufficiently supported, and hence, did not significantly contribute toward development gains. Priority should be given to selecting areas that deserve greater attention in the next phase of program development.

   For example, consideration should given to investing resources in expanding the curriculum to include a focus on children's education. More specifically, we recommend that specific materials be incorporated that emphasize the importance of children's education, as well as ways in which women can become more involved with their children's education. Additionally, the HEAL and BPEP programs could be strengthened by linking them directly with the formal schools and involving literacy class participants in Parent Teacher Associations or multi-generational programs.

Furthermore, we suggest that increased emphasis be placed on income-earning activities either by adding additional components to the curriculum or by channeling participants who have completed these programs into programs such as Women's Economic Empowerment and Literacy (WEEL), which are specifically targeted to increasing women's economic empowerment.

1. INTRODUCTION

The relationship between formal basic education and long-term economic growth is well documented, with numerous studies reporting a strong correlation between the education of girls and a country's level of economic development (Summers, 1994; King and Hill, 1993; King, 1990; Subbarao and Raney, 1993; Floro and Wolf, 1990; Psacharopoulos, 1989). However, studies showing the specific contribution of women's integrated literacy[2] and basic education programs are lacking. While investments in literacy training over the past 30 years have increased, few studies have been conducted to assess the effects of these programs on women's social and economic development or to identify and evaluate what kinds of specific integrated literacy interventions are cost-effective and work best for women.

Female literacy rates in four countries of South Asia are among the lowest in the world: Nepal (25%), Pakistan (32%), Bangladesh (31%), and India (48%) (UNESCO, 1998b). High rates of female illiteracy have severe consequences for women, their families, and their communities. Many researchers have noted a correlation between low rates of literacy and other indicators of underdevelopment, such as poverty, illness, malnutrition, high infant mortality, and unemployment (Malmquist, 1992; Psacharopoulos, 1995). Low levels of educational attainment and poor nutrition exacerbate poor living conditions and diminish an individual's ability to work productively (World Bank, 1995b; Subbarao and Raney, 1993; Summers, 1994).

According to Psacharopoulos (1994), the impact of social and economic loss is even more damaging when women are denied access to basic education and health care. He further notes that evidence from around the world shows that private returns from investments are at least as great for women as for men, and may be marginally higher. However, the total benefits to society from investments in women's education are significantly greater than the same investments for men, as evidenced by the strong correlation between women's education and their health, nutritional status, and fertility levels, as well as the education, health and productivity of future generations. These correlations are even stronger when women have control over the way household resources are allocated (World Bank, 1995b).

Moreover, findings from studies carried out in a number of developing countries suggest that "educated women are more likely to stand up for themselves, participate in the labor force, and seek health care for themselves and their children" (Atari, 1997, p. 50). The Plan of Action adopted at the Jomtien Conference on Education for All in 1990 signaled the need to address women's social and economic needs through basic education. The Program of Action adopted at the 1994 International Conference on Population and Development in Cairo recognized the importance of providing women with educational opportunities in declaring education a "key factor in women's empowerment," and terming the eradication of illiteracy "one of the prerequisites for human development" (International Conference on Population and Development, 1994, p. 51). The theme was similar at the 1995 Beijing Conference on Women.

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[2] The use of the term "integrated" implies that basic reading, writing, and numeracy skills are not taught in isolation but are a part of an integrated approach that incorporates functional information on topics such as health, savings and credit and livelihoods development, agriculture, family planning, and so forth, with basic literacy skills. An integrated literacy program can be defined as one that "attempts to provide a comprehensive education over a longer time frame than a program or campaign" (Comings, et al., 1995). An integrated literacy program offers literacy training and also provides the participants with skills and knowledge in one or more areas.

In Nepal the rate of female illiteracy, at 75%, is one of the highest among low-income countries. In some districts of Nepal, the female illiteracy rates are as high as 89% (UNESCO, 1998; International Centre for Integrated Mountain Development, 1997). This is so despite efforts by the government and many nongovernmental organizations to implement literacy programs for women.

Literacy attainment among women in Nepal has potentially far-reaching implications for individuals, families, communities, and national development. The increased knowledge, skills, attitudes, and self-confidence that come with acquisition of literacy skills have been demonstrated to help women in many ways. For example, women more effectively pursue income-generating activities (World Bank, 1995) and become more active in community groups and organizations (Archer and Cottingham, 1996). Additionally, literate adults better understand the legal system so that they are able to protect themselves from abuse and exploitation (Lind, 1995). They more effectively pursue their individual and family health needs, and they provide better support for their children's schooling (Burchfield, 1997; McNelly and Dunford, 1996; Sandiford, et al, 1995; World Bank, 1995; Smith, Shrestha and Comings, 1995; Griffiths 1992).

1.1 The Goals and Purposes of the Girls' and Women's Education Initiative and the Girls' and Women's Education Policy Research Activity (GWE-PRA)

Prompted by strong evidence of the impact of girls' primary school completion on developing countries' long-term social and economic development, United States Agency for International Development (USAID) launched the Girls' and Women's Education Initiative in 1995 to spur rapid further advances in girls' and women's education. The Girls' and Women's Education Policy Research Activity (GWE-PRA) has conducted studies in five countries: Peru, Benin, Bolivia, Honduras, and Nepal. Studies in Peru (Chung, et al., 2000) and Benin (Gohoung, 1998), carried out through World Education, focused on constraints to girls' education and made recommendations for policy reforms to overcome these constraints.

The primary objective of GWE-PRA studies in Bolivia (Burchfield, Hua, Suxo, and Rocha, 2002), Honduras (Burchfield, Hua, and Brown, 2002) and Nepal, which were carried out by World Education in collaboration with Harvard University's Graduate School of Education and the Education Development Center, was to determine the impact of women's integrated literacy programs on women's social and economic development. Findings from this research are expected to help planners at the national level and in international assistance agencies make more informed decisions about the allocation of program resources. In addition, findings may help the private and public sectors develop more appropriate programs tailored to women's development needs. Although activities in each of these countries had different modes of delivery, different target audiences and were at different stages of development, they shared a common purpose. All programs in the three countries where the longitudinal studies were conducted aimed at increasing the literacy skills of women through nonformal basic education.

1.2 Girls' and Women's Education Policy Research Activity in Nepal

In Nepal, GWE-PRA investigated the impact of women's integrated literacy programs on the country's development by examining measures of socio-economic status, as well as the following indicators of women's social and economic development: 1) literacy and education, 2) children's education, 3) family and reproductive health, 4) participation in income-earning activities, 5) community participation and 6) awareness of legal rights. The research presents cross-sectional comparative analyses of these activities in the baseline year (referred to throughout this document as Year 1) and measures changes in the indicators over a period of three years. The study examined two integrated literacy programs: the Basic and Primary Education Project (BPEP) and the Health Education and Adult Literacy (HEAL) program.

1.3 Nepal Country Profile

1.3.1 Overview

Nepal is a small, landlocked Hindu kingdom about 884 kilometers long from east to west and 145 to 241 kilometers wide from north to south (about 500 miles long and 100-200 miles wide). The Tibet Autonomous Region of the People's Republic of China to the north and India to the east borders the country, west, and south. The country is divided into three ecological zones on the basis of altitude, north to south. Nepal is a country of physical extremes, from the mountainous belt of the Himalayas in the north to the subtropical plains in the south. Politically, the country is divided into 5 development regions, subdivided into 14 zones, and further divided into 75 districts. Nepal has a population of over 21 million people of varying ethnic, cultural, and linguistic backgrounds. The 1991 census recorded 35 languages and 59 ethnic groups. Nepali is the official language, while the next two most commonly spoken languages are Maithali and Bhojpuri, both found in the southern part of the country, which is more densely populated. The majority of the people are Hindus (86.5%), followed by Buddhists (7.8%), Muslims (3.5%), and others (2.2%). Generally in Nepal, a hierarchical social structure with a strong caste system dictates one's place in society, and a strong patriarchal system dictates roles for women.

Nepal is one of the least developed nations and has one of the lowest per capita incomes in the world, with a GNP (per capita) in 1998 of $210 (UNESCO, 1998b). The country's rapidly increasing population exacerbates the deterioration of its natural resources, principally through deforestation. Infrastructure, such as transportation and communication, is very limited. Nepal has relied heavily on foreign aid for its development, and its foreign debt has increased considerably over the last 20 years.

The political situation in Nepal is currently very unstable. Before 1990, Nepal was governed by an absolute monarchy. In 1990, a "people's democracy movement" was launched, resulting in an interim government that was formed under a new, multiparty democracy system. At that time, the monarchy became constitutional. General elections were held in 1991, 1994, and 1999. Nepal's power struggles are still generating popular dissatisfaction with government decisions.

On June 1, 2001, 11 members of Nepal's Royal Family were massacred. Those murdered included King Birendra Bikram Shah, Queen Aiswarya, Prince Nirajan and Princess Shruti. The official report released by the Nepali government blamed then Crown Prince Dipendra. Crown Prince Dipendra was crowned King as he lay in a coma from what is reported to be a self-inflicted gunshot wound. When King Dipendra died, Gyanendra, Birendra's younger brother, was crowned the King of Nepal. These events culminated in a change within the ruling Congress party's leadership. In July 2001, a new Prime Minister was appointed, and new heads of Ministries were named.

Since the mid-1990's an underground Maoist movement has caused fear and violence in many areas of the country. The Maoists were initially situated in only a few districts of Nepal, but the Maoist movement now has support throughout the country, including the Kathmandu Valley. Over 4,000 lives have been claimed in the movement, many of these Nepal police personnel and common villagers. Professor Dhruba Kumar, a strategic analyst, in the book *Domestic Conflict and Crisis of Governability in Nepal* commented, "The strength of the Maoist insurgency is much related with the relative weakness of the government."(Spotlight On-Line Magazine, 2001)[3] While the various governments that have been in place in Nepal have attempted to secure their power, the Maoist movement has grown and gained popular support throughout the country. The current government felt the threat of the Maoist movement and called for Peace Talks in August 2001. This was the first time in the five-year movement that such talks were initiated by Nepal's government. If Maoist party popularity continues to grow, it will most likely become a major political force for the ruling party and for other political parties that lean toward the left and communism. The cease-fire ended in November 2001, and fighting has increased throughout the country. However, this did not affect the period of the study during which the study was carried out.

1.3.2 Literacy in Nepal

Until 1951, only 1% of the total population was literate. In 1952, with U.S. assistance, the Nepali government launched a program in adult education. Dr. Frank Laubach of the World Literacy Foundation was appointed to assist in designing and preparing literacy materials. Initial three-month courses were designed in the early 1950s.

By the late 1950s and early 1960s, courses were extended to six months, with more emphasis on providing training in social education, and rural libraries were established. Later, the program was extended to nine months to include six months of reading, writing, and mathematics, and three months of health, agriculture, and social sciences. In 1971, the government implemented a National Education System Plan (NESP). NESP focused on making literacy and education more functional in order to provide knowledge and skills to adults to solve problems in their daily lives. With the efforts of the government and volunteers to eliminate illiteracy, the literacy rate had increased to almost 9% by 1961, and by 1971, the overall literacy rate was at 13.9% (Basnyat, 1984).

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[3] Spotlight On-Line Magazine. *The Godavari Talks, Where Will It Lead To?* Vol. 20: No. 60, September 7 – September 13, 2001.

In 1977 the Ministry of Education, the Centre for Educational Research Innovation and Development (CERID, a division of Tribhuvan University), and World Education, an international nongovernmental organization (INGO), teamed up to explore more effective ways to provide nonformal education to rural areas of Nepal. Over the next three to five years, the team developed, piloted, and continuously revised a set of learning materials. The result of these efforts was the creation of the Nepal National Literacy Program, a six-month curriculum using a text called *Naya Goreto (New Trail)*, designed to teach reading, writing, and math skills while also providing a number of relevant social messages. Many INGOs and local nongovernmental organizations (NGOs) involved in rural development subsequently adopted the materials and the approach used, with literacy becoming an "entry point" for development work in the villages.

Throughout the 1980s literacy efforts continued to grow, and the number of participants in literacy programs multiplied. In 1988, the Basic and Primary Education Project, under the Ministry of Education's Nonformal Education Unit, initiated its own Women's Education Program (WEP).[4] The objective of this program was to provide literacy skills and knowledge to women and to help them become self-reliant by providing skills training to run income-generating activities. While there are two main literacy programs implemented–the six-month National Literacy Program and BPEP's 18-month Women's Education Program–a number of INGOs and NGOs continue to develop new materials and to provide post-literacy programs on specific topics, such as health and credit.

The United Nations (2001) estimates that 46% of the 15-24 year olds in Nepal were literate in 2002. However, a wide discrepancy exists between the literacy rate for males (60.3%) and females (23.9%). Table 1 depicts literacy rates for the population by geographic area in Nepal over a 20-year period. As illustrated, literacy rates for both males and females have increased substantially during this period. However, the gap between males and females is evident in all areas of the country. Although the rate of female literacy increased from 3.9% in 1971 to 25.0% in 1991, it remains less than half that of the male literacy rate.

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[4] This should not be confused with the Women's Empowerment Program (WEP), operating in Nepal under Pact (another INGO) which is also referred to as WEP.

Table 1: Percent of Literate Population Over Six Years Old in Nepal[*]

	1971			1981			1991		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Nepal	23.6	3.9	13.9	33.9	12.1	23.3	54.5	25.0	39.6
Terai	22.1	4.4	13.7	32.1	11.9	22.5	49.8	22.7	36.5
Hill	25.8	3.9	14.8	36.9	12.9	24.9	60.2	28.5	43.9
Mountain	17.6	2.1	9.9	27.6	7.8	17.9	50.2	16.5	33.2

[*] Sources: Central Bureau of Statistics, His Majesty's Government, National Planning Commission Secretariat. *Population Monograph of Nepal 1987.* Kathmandu, Nepal.
Central Bureau of Statistics, His Majesty's Government, National Planning Commission Secretariat. *Population Monograph of Nepal 1995.* Kathmandu, Nepal.
National Research Associates, *Nepal District Profile (Second Edition).* Kathmandu, Nepal, June 1994.

1.4 Integrated Literacy Approaches

By 1995, over 500,000 people a year were participating in literacy programs (Comings, Smith, and Shrestha, 1995). Three main teaching and learning approaches to nonformal education have been used in Nepal: the Keyword Approach, Language Experience Approach, and REFLECT (Regenerated Freirean Literacy through Empowering Community Techniques).

1.4.1 Keyword Approach

The Keyword Approach is based on the Freirean concept of education. It was introduced to Nepal with the development of *Naya Goreto*, which is the textbook for basic-literacy learners widely used throughout the country in both governmental and nongovernmental education programs. Using the Keyword Approach, learners are expected to gain skills and knowledge in reading, writing, and mathematics within a six-month period. A keyword is introduced in each lesson. Each keyword is meant to introduce new letters to the participant, while at the same time introducing a familiar topic or idea that is relevant to the learners' daily lives. Each lesson begins with a discussion based on a picture. The picture, presented to the participants, depicts the idea of the keyword. After the picture discussion and presentation of the new word in writing, the class facilitator separates the letters and syllables used in the word and then teaches reading and writing of the individual letters and syllables found in that word. *Naya Goreto* is not the only text to use this approach. A number of other organizations, including BPEP's Women's Education Program, have developed their own materials in both Nepali and other local languages that use the Keyword Approach.

1.4.2 Language Experience Approach

The Language Experience Approach (LEA) was introduced in Nepal during the 1990s. In 1991, a workshop entitled "Literacy Programs in a Multilingual Society" was organized by Save the Children/US and Redd Barna/Nepal. The aim of the workshop was to identify alternative approaches to delivering literacy training in a multilingual society such as Nepal. The Language Experience Approach is a reading technique that helps participants to first become literate in their native language, after which they can use another approach to learn the Nepali language and Devanagari script. In this technique, participants are encouraged to talk about experiences, problems, and events in their lives. Their words are transcribed and used as text for reading and writing practice. Save the Children/US, as well as a number of other literacy program providers, are using LEA for basic-literacy learners.

1.4.3 REFLECT Approach

REFLECT, developed by the INGO Action Aid, was first introduced to Nepal in 1995. This approach emphasizes the empowerment of villagers and increases their literacy skills. It aims to bring changes on three levels: individual, institutional, and structural. Participatory Rural Appraisal (PRA) methods are used for the most part. There is no fixed curriculum. Instead, locally produced materials are used. The literacy class begins with a discussion about the participants' experiences. A keyword is generated from the discussion. A facilitator develops lessons using this keyword, and helps participants to prepare materials such as social resource maps and other tools used in PRA. Additionally, there is no predetermined duration of the literacy class. In REFLECT, the literacy class is viewed as part of a larger, overall effort to raise awareness that will ultimately lead to community action.

2. METHODOLOGY

The sample examined in this study includes women participating in two integrated literacy programs: HEAL and BPEP, as well as those in a control group who are not participating in any literacy program. By assessing the impact of participants' knowledge, attitudes and practices related to selected indicators of women's social and economic development, we can infer that such programs, if implemented on a wider scale would ultimately result in changes within the larger society.

By comparing participants' results with those of a random sample of women in similar circumstances who did not participate in the programs, we can identify the effects of the program intervention on the indicators examined. We would expect that if the programs do have an impact, then the larger the program area, the greater the impact will be nationally. By studying a random sample of women who participated in an integrated literacy program, we can reasonably infer that if the sample is representative, women participating in the same programs in other parts of the country would demonstrate similar results.

Specific indicators examined in this study include the following:

1. **Literacy/Education Level**
? Literacy skills achievement
? Persistence in literacy training

2. **Health Knowledge and Practice**
? Knowledge of maternal and child health
? Knowledge of nutrition (vitamin A sources)
? Knowledge of family planning
? Use of family planning methods
? Knowledge of sexually transmitted infections (STIs) and Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS)

3. **Participation in Income-Earning Activities**
? Economic group membership
? Participation in income-earning activities
? Existence of savings
? Use of credit (especially for income-earning activities)

4. **Political Awareness and Participation**
? Knowledge of local and national politics
? Participation in political process
? Attitudes toward politics

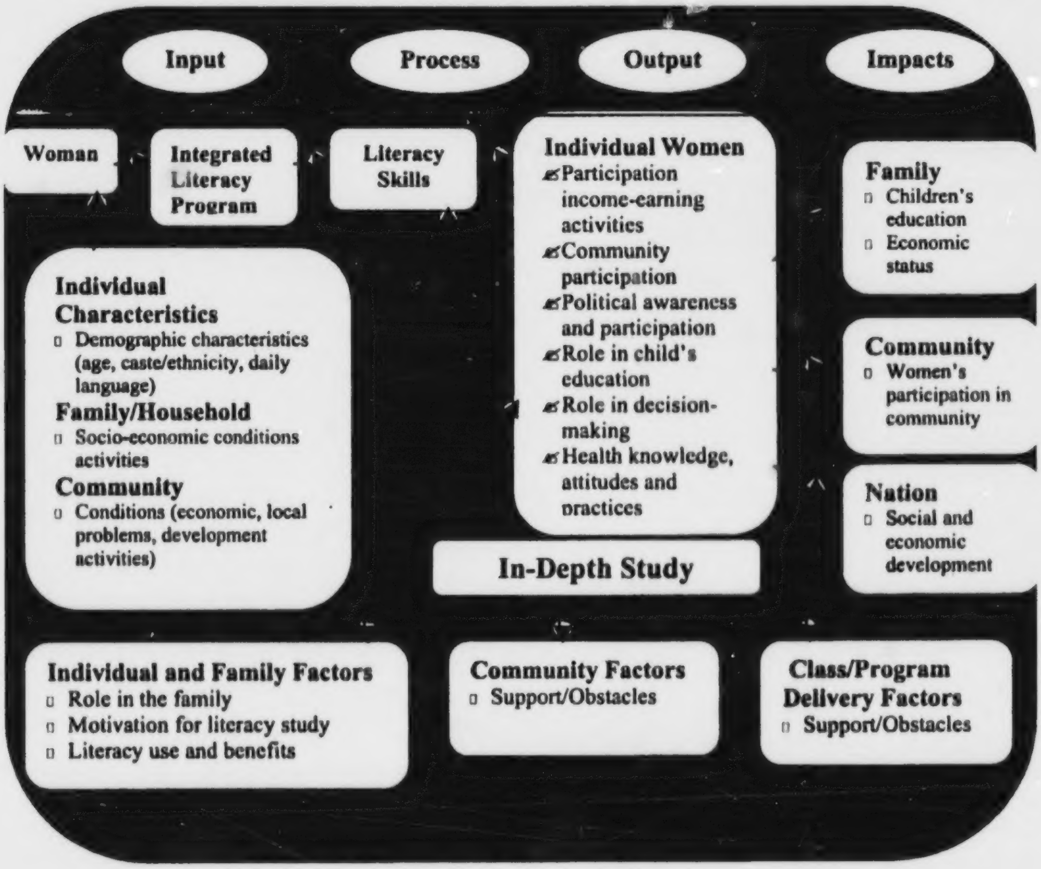
5. Community Participation

? Community group membership
? Participation in community development activities
? Awareness of legal rights
? Participation in women's rights activities

6. Children's Education

? Parents' attitudes about importance of education
? Parents' involvement in children's education

The GWE-PRE research model is graphically depicted in Figure 1.



Input
Process
Output
Impacts
Woman
Integrated Literacy Program
Literacy Skills
Individual Women
Participation income-earning activities
Community participation
Political awareness and participation
Role in child's education
Role in decision-making
Health knowledge, attitudes and practices
Family
Children's education
Economic status
Community
Women's participation in community
Nation
Social and economic development
Individual Characteristics
Demographic characteristics (age, caste/ethnicity, daily language)
Family/Household
Socio-economic conditions activities
Community
Conditions (economic, local problems, development activities)
In-Depth Study
Individual and Family Factors
Role in the family
Motivation for literacy study
Literacy use and benefits
Community Factors
Support/Obstacles
Class/Program Delivery Factors
Support/Obstacles

Figure 1: GWE-PRA Nepal: Literacy Study Model

It should be noted that the assignment of indicators into categories is not always clear-cut, and there is some overlap among areas. For example, measures of community participation include women's participation in economic groups as well as in health groups. Hence, participation in an economic group might also be viewed as an indicator of participation in income-earning activities; participation in a health group could also be linked with indicators of health practices. Similarly, participation in women's rights activities could be considered both a community activity (a measure of community participation) and a political activity (a measure of political participation).

This section describes the research design, including details about the integrated literacy programs, the sample size and the study's limitations.

2.1 Hypotheses

The overall research goal was to determine the impact of the integrated literacy programs on women's social and economic development. The underlying assumption is that improving women's social and economic development ultimately leads to increased development in the country.

This study examined factors contributing to women's persistence in literacy programs and tested three hypotheses concerning the impact of integrated literacy programs on development. These hypotheses focused on respondents' awareness (knowledge and attitudes) and behavior (practice and skills).

1. Women who participate in women's integrated literacy programs *are more aware* of health and reproductive health issues, political affairs and the importance of children's education than they were prior to participating in the program and in comparison to women who do not participate in the programs.

2. Women who participate in integrated literacy programs *are more likely to participate* in income-earning activities, political elections, school activities and community activities than they were prior to participating in the programs and in comparison to women who do not participate in the programs.

3. Women who participate in women's integrated literacy programs have greater literacy skills than they did prior to participating in the programs and in comparison to women who do not participate in the programs.

2.2 Research Design

The GWE-PRA Nepal research design consists of both quantitative and qualitative data collection. Quantitative data were collected once a year for three years from an experimental and a control group chosen from the Terai (the southern flatlands of Nepal). Survey data were collected from more than 1,000 women entering one of the two integrated literacy programs. The same women were followed for three years through an annual survey. Year 1 data (which served as the baseline) were collected within two to four weeks of the beginning of the literacy classes in which 843 women in the experimental group were enrolled. The control group comprised 229 women. These programs included BPEP, which is run by the Nepali government, with funding from the

Royal Danish Embassy, and the USAID-funded HEAL program, managed by World Education. Responses of women participating in these programs were compared to those of women in a control group of non-participating women.

A sub-sample of 20 women (16 from the experimental group and 4 from the control group) were interviewed at intervals over the three-year period to provide more in-depth, qualitative information about the women, their families, and the communities in which they reside.

To address the limitations posed by self-reporting, the design incorporates a number of methods of "triangulation." Responses to selected questions, such as whether the women had previously participated in a literacy class, were cross-checked by asking the same questions to other family members and members of the community. Discrepancies between sources were reported, thus providing the reader with additional information on which to assess the validity of the responses. Additionally, husbands were interviewed to obtain family background and demographic information. The instruments used in this study are described in greater detail in Section 2.2.3.

2.2.1 Experimental Group

Like the majority of literacy programs in Nepal, the programs included in this study are integrated literacy programs. As noted earlier, two of the largest integrated literacy programs in Nepal (BPEP and HEAL) were selected for this study. The experimental group includes 843 women who started studying in one of these two programs at the time the research began in the fall of 1997. These programs are described in detail in Section 3.1. The design called for including in the experimental group only women who had not attended formal education or had not participated in any other literacy program prior to enrolling in the HEAL or BPEP program. However, as discussed in Section 4.2.1, data analysis revealed that some of the women in the sample had actually participated in literacy programs or attended primary school prior to the GWE-PRA study. These women were included in the study, since their participation had occurred prior to Year 1 data collection.

2.2.2 Control Group

The control group is composed of women in the same area who reported that they never attended an integrated literacy program at the time the GWE-PRA study began. Since the beginning of the study, 28 women in the original control group of 229 women reported that they had joined literacy programs (between November 1997 and November 1999). These women were excluded from the analysis. Although the control group was supposed to include only those women who had never attended formal education, data analysis revealed that a small number of women (3.0%) had attended primary school (see Section 4.2.1) prior to the beginning of the study. These women were included, since their schooling had taken place prior to Year 1 data collection.

2.2.3 Data Collection Instruments

2.2.3.1 Women's Survey

Female interviewers administered a questionnaire each year to women who had participated in HEAL or BPEP literacy classes. In Year 1, literacy class participants had been enrolled in the classes for two to four weeks at the time they were interviewed. The survey included information about individual characteristics of the women and five main impact areas, including: 1) participation in income-earning activities, 2) participation in the community, 3) political awareness and involvement, 4) health knowledge and practices, and 5) behavior regarding children's education.

The survey was also administered to women who were not currently participating in a literacy program, had not participated in any literacy class in the past, and had not studied in school (the control group). The same questions were asked of both groups, with two exceptions. A question asking the literacy class participants about their reasons for joining the literacy class, and a question about how they planned to use their literacy were asked of the experimental group but not of the control group.

2.2.3.2 Husband/Head of Household Survey

Male enumerators conducted a separate survey of the women's husbands. If husbands were not present, heads of household were interviewed. Husbands of women in the control group were also interviewed. If the woman's husband was not living with her and she was the head of the household, then these questions were asked of the woman herself. The husband/head of household survey included questions about demographic status, economic status, and access to facilities. Some basic demographic information and economic status questions were collected from the husband or head of household in order to reduce the length of the women's survey and to obtain accurate household information.

Two sections of the survey that matched the women's survey were also included for all husbands interviewed (but not other heads of household). This section includes questions about the husbands' attitudes and behaviors regarding children's education, which were included so that comparisons could be made between husbands' and wives' attitudes toward their children's education.

Finally, the husband's survey served as both a source of information and a research tool. Experience with other studies has shown that conducting an interview with a woman in a Nepali village often attracts a crowd around her as she is interviewed. Some of these people may include her spouse and/or other family members who are interested, curious, or concerned and, therefore, want to be present during the interview. In some instances these individuals attempt to respond on behalf of the woman. In this study, interviewing husbands simultaneously helped physically separate them from the women, and, as far as possible, eliminate the influence of the husband/head of household on the woman's responses.

2.2.3.3 Key Informants/Community Leaders Survey

Survey supervisors carried out 89 interviews with key informants and community leaders. Key informants were individuals from different organizations and institutions within the community, including Village Development Committee (VDC) chairpersons, teachers, community health workers, social workers, and respected persons who had lived in the community for a long time. The main purpose of these interviews was to gain information about the communities in which data were collected. These data helped develop district and VDC-level profiles. Information was collected about the general socio-economic conditions of the VDC area, the main development activities in the area, the main problems facing the community, community attitudes toward women in general, and women's participation in community activities.

2.2.3.4 Literacy Skills Test

A 49-item literacy skills test, designed by World Education staff, was administered to all the women surveyed. The test was functional in nature, using real objects or pictures and posters found in Nepali villages. The test allowed for separating reading skills into decoding and comprehension, and writing skills into dictation and composition. This assessment was administered one-on-one, rather than in a classroom or group format. It was given orally using respondents' first language when Nepali speaking and comprehension skills were poor or nonexistent. For reading and math portions, participants were allowed to answer orally, rather than in writing, to ensure that obtaining a correct answer on reading and math was not dependent on the respondents' writing skills. The entire test was designed to take a maximum of an hour and a half.

2.2.4 Field Researcher's Diary

GWE-PRA field researchers were given a notebook in which to record important information about the villages, the women, and the programs. Specifically, they were requested to write: 1) their thoughts and perceptions about the particular women they interviewed, including anything they thought was interesting, sad, or amazing about the respondent's life or her community; and 2) their thoughts about this particular field work and their experience in using the data collection instruments. They were to note frustrations, difficulties, and exciting experiences. The information written by the enumerators in their diaries was categorized and prepared for analysis. Diary analysis was mainly used to provide specific examples or supporting data for survey questions and to identify some limitations of the survey work as viewed through the enumerators' eyes and experiences.

2.2.5 In-Depth Interviews

In-depth interviews were conducted with a small number of respondents to gain greater insight into responses to survey questions. Qualitative data were gathered from a small sub-sample of 20 women who participated in the survey. The in-depth analysis complements the survey data and helps to elucidate women's responses to the survey questions. This analysis also helped to identify other factors that may have contributed to changes in women's behavior and facilitated further probing into the factors contributing to or hindering women's participation in literacy training.

2.3 Research Sites

The study was conducted in the Terai region of Nepal (which consists of the entire southern part of Nepal), primarily because since 1997, almost all USAID-sponsored literacy programs have been in this region. The second reason was that the study intended to assess the impact of two of the largest integrated literacy programs, and it was necessary to select areas in which both programs were in operation at the time the study began. The map in Figure 2 illustrates the study areas.

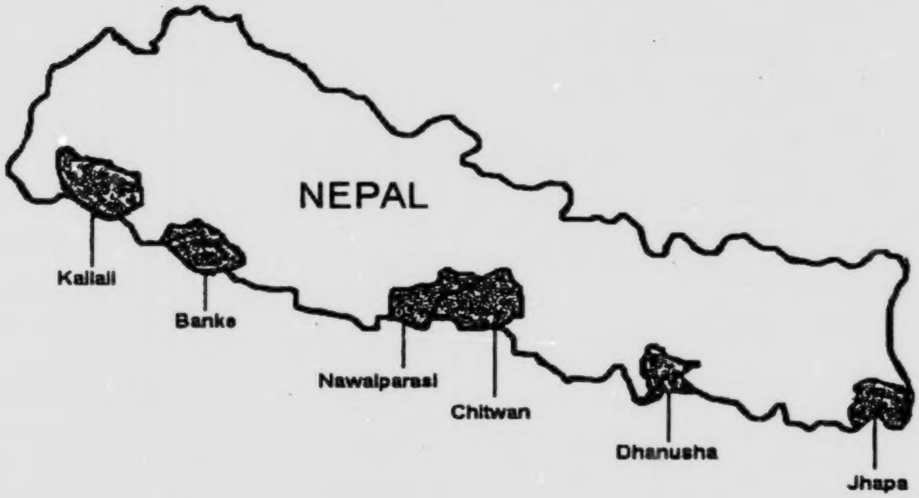


Figure 2: Nepal Map of Survey Data Collection Sites

2.4 World Education's Role in the Development of Literacy Programs in Nepal

For more than two decades, World Education has worked with the Government of Nepal and a wide range of local NGOs in the development and implementation of adult literacy programs in Nepal. The *Naya Goreto* curriculum that World Education helped to develop in the 1970s and 1980s has been used in numerous literacy programs throughout the country. To carry out a study of literacy programs in Nepal that are completely free of World Education influence would be extremely difficult. However, this fact should not impinge on the validity of the study. While World Education is the prime contractor for the HEAL program, this project is not implemented directly by World Education but through various local NGOs throughout Nepal. Interviewers and local research staff were carefully selected to ensure that they had no prior affiliation with either of the literacy programs (HEAL or BPEP) under examination. Additionally, it was made clear from the outset that this study is not an evaluation of the integrated literacy programs *per se* but rather was initiated to determine whether integrated literacy programs of this type have an effect on the country's social and economic development. The study does not attempt to assess program performance or make judgments about the extent to which the programs meet their objectives.

2.5 Sampling Procedure

2.5.1 District Selection

From 20 Terai districts, 6 were selected for inclusion in the study. District selection was based on five criteria: 1) both integrated literacy programs were running basic-literacy classes in the district that started in 1997; 2) each of the five development regions in Nepal were represented; 3) the major languages spoken in the Terai region were represented; 4) districts with both high and low literacy rates were included; and 5) districts with varying degrees of an economically-active population were represented. Table 2 shows the districts included.

Table 2: GWE-PRA District Selection Criteria[a]

District Name	Literacy Rate	No. of VDCs	Major Languages	Integrated Literacy Program
Kailali	31.2%	44	Tharu Nepali	BPEP HEAL
Banke	34.6%	47	Abadhi Nepali Tharu	BPEP HEAL
Nawalparasi	41.2%	77	Nepali Bhojpuri Magar	BPEP HEAL
Chitwan	55.7%	38	Nepali Tharu Tamang	BPEP HEAL
Dhanusha	18.4%[a]	103	Maithali Nepali Others	BPEP HEAL
Jhapa	57.3%[b]	50	Nepali Rajbanshi Limbu	BPEP HEAL

[a] Source: National Research Associates, *Nepal District Profile*, 1987.

[b] This is one of the lowest literacy rates among the Terai districts.

[c] This is one of the highest literacy rates among the Terai districts.

2.5.2 Village Development Committee Selection

The Village Development Committee is a geographical area and a political unit within the district that is further subdivided into nine wards. Information about the number of classes being conducted in each VDC was collected from each program's main office in Kathmandu. Both HEAL and BPEP have the potential to run nine classes in each VDC. They may both choose to run classes in each of the nine wards, although generally this sort of overlap is avoided. Only VDCs with five or more classes run by either program were selected to be included in the sample. A total of 38 VDCs were selected from all six districts for the study. A total of 22 VDCs were selected from the BPEP program and 21 VDCs were selected from the HEAL program. There was overlap among VDCs, since some VDCs had both HEAL and BPEP programs. An effort was made to select clusters of VDCs where HEAL and BPEP classes were in operation.

2.5.3 Class Selection

As mentioned earlier, one literacy program runs up to nine classes in a VDC. HEAL and BPEP programs overlapped in several VDCs (although generally each did not run nine classes in the VDC). During Year 1 data collection, field supervisors were instructed to meet with the class facilitators and check the registers to ensure the class to be included in the sample was actually running. The classes that were not operating (either they had not started yet or class had been held on only one or two days over a two-week period) were not included in the study because it was likely that these classes might eventually be closed.

2.5.4 Selection of Women in the Sample

A maximum of six women from a class was chosen. The rationale for this was twofold. First, if the class itself collapsed in the near future, less data would be lost due to participant dropout. Second, the research team could survey six women in two days, thus reducing the likelihood that women might discuss their survey responses with classmates and/or other villagers. Control groups were selected from the same areas as the experimental groups (again, limited to six in one area). These were women who had not studied in school or with any literacy program.

A random sampling method was used for selecting six women per class. Supervisors and interviewers were instructed to select only six women from one class. Selection criteria included: 1) the respondents must be married; 2) they must be at least 15 years of age; 3) they must reside outside their natal home; and 4) only one woman per household should be selected. Only married women were chosen, since unmarried women are more likely to leave the area and would thus be difficult to track. Women who were chosen had to be at least 15 years old because that is the criterion for participation in the two integrated literacy programs in this study.

Supervisors were also requested to use a lottery method and to make the selection process participatory. In the field, supervisors obtained the list of class participants from the facilitator. A list was prepared with the names of the women who fit the above criteria. Their names were written on pieces of paper (one name per piece) and folded into small pieces so the names were not visible. Where possible, the participants themselves chose pieces of paper and then read the names aloud to the class. Involving the participants in the selection procedure helped to demystify it. It enabled women to understand that they were not specially picked for some unknown reason. When it was not possible for the research supervisor to attend the class, an interviewer met with the class facilitator and the same process explained above was undertaken. Two alternate names were also selected in case a woman who had been randomly selected either refused to participate or could not be reached. Finally, interviewers were instructed not to force women to participate.

2.5.5 Sample Size

During the first year of the study 1,072 women were interviewed. Efforts were made to interview all women in the Year 1 sample each year over three years. In the second year, interviewers were able to locate and interview 1,022 of these women. By Year 3, the number of women who were found and interviewed decreased to 967. This represents about 90% of the original sample. The distribution of sample by literacy program and group is provided in Table 3.

Table 3: Number of Women Interviewed by Program, Group and District

	Experimental Group						Control Group			Total			Data Loss From Yr. 1	
	BPEP			HEAL										
District	**Yr. 1**	**Yr. 2**	**Yr. 3**	**Yr. 1**	**Yr. 2**	**Yr. 3**	**Yr. 1**	**Yr. 2**	**Yr. 3**	**Yr. 1**	**Yr. 2**	**Yr. 3**	**Yr. 2**	**Yr. 3**
Jhapa	71	69	68	75	72	72	34	29	27	180	170	167	10	13
Dhanusha	73	67	67	75	72	69	38	38	38	186	177	174	9	12
Chitwan	71	68	63	72	68	67	39	38	30	182	174	160	8	22
Nawalparasi	75	72	68	72	72	68	40	40	38	187	184	174	3	13
Banke	74	71	68	41	38	36	39	38	34	154	147	138	7	16
Kailali	72	64	61	72	67	66	39	39	27	183	170	154	13	29
Total	436	411	395	407	389	378	229	222	194	1,072	1,022	967	50	105

Of the 843 women who had entered one of the two adult literacy programs in Year 1, 800 women were interviewed again in Year 2 and 773 in Year 3. Of the original 229 women in the control group in Year 1, 7 could not be interviewed again in Year 2 or Year 3, and 28 were excluded from the analysis because they joined a literacy class during the three-year period. Additionally, during the period a number of women in the experimental group switched programs (from HEAL to BPEP or vice versa) after the first year.

Table 4 depicts the progress of experimental group women in the basic- and post-literacy programs.

Table 4: Participation in Literacy Classes Over Three Years

Year 1 Completed Basic Course?	Year 2 Number Who Joined Classes*						Year 3 Number Who Joined Classes*					
	HEAL			BPEP			HEAL			BPEP		
	None	Basic	Post	Basic	Post	Other	None	Basic	Post	Basic	Post	Other
HEAL												
No (n =189)	160	10	17	2	-	-	182	5	1	-	-	1
Yes (n = 189)	89	5	92	1	-	2	170	16		1	1	1
Total (n = 378)	249	13	109	3	-	2	352	21	1	1	1	2
BPEP												
No (n = 268)	241	-	1	20	6	-	247	14	2	2	-	3
Yes (n = 127)	85	2	5	14	21	-	103	2	6	13	-	3
Total (n = 39[illegible])	326	2	6	34	27	-	350	16	8	15	-	6

* Other includes Guardian Education, Legal Literacy and Mahila Sashakhikaran.

2.6 Study Limitations

The indicators of women's social and economic development employed in this study described earlier are "proxy" indicators, in that they serve as substitute measures for assessing actual changes in economic productivity, fertility, nutrition, agricultural production, etc. One would ideally wish to measure these variables directly, however, studies utilizing techniques that allow for direct measurements are extremely time consuming, costly, and ethically questionable. For example, to directly assess program impact on fertility, it would be necessary to track birth rates of specific respondents over their reproductive life span (10 to 20 years), as well as to have direct knowledge of their reproductive practices.

To assess changes in health and nutritional status would require access to medical records, height and weight charts, etc. Assessing changes in economic status would require direct knowledge of salaries, savings account balances, and other personal financial information. Because of the need for confidentiality (of medical, school, and financial records), the rights of respondents to privacy and the costs associated with collecting such information, it was simply not feasible to obtain these direct measures.

Hence, this study employed the use of "proxy" measures that rely primarily on self-reporting to estimate changes in behaviors and practices. The pre- and post-experimental and control group research design allowed for making reasonable inferences about the attribution of changes to the programs under examination. Although such measures provided an estimate of changes, constraints posed by the use of self-reporting measures must be borne in mind.

3. DESCRIPTION OF LITERACY PROGRAMS IN THE STUDY

3.1 Basic Primary Education Program (18 Months)

3.1.1 BPEP Program Content During Data Collection Period

The Basic and Primary Education Project under the Ministry of Education of Nepal (MOE/N) has adopted various policies to increase female participation in both formal and nonformal education programs. The project attempts to increase the primary school enrollment of girls aged 6-10. Additionally, nonformal education programs are conducted for out-of-school children, who are 8-14 years of age and non-literate women between the ages of 15-45.

As noted earlier, the Women's Education Program (WEP)[5] under the Nonformal Education (NFE) Unit of BPEP, was initiated in 1988 to supplement the Primary Education Project (PEP). WEP recognized that unless mothers are literate, children's enrollment in primary school would not increase to a satisfactory level (BPEP, 1998). In 1988, WEP was piloted in six districts: Jhapa, Tanahun, Dhankuta, Kaski, Dang, and Surkhet. The project implemented 12 classes in each district. By 1996/97, 40 districts (out of 75 districts in Nepal) were running WEP classes.

The WEP's objectives are to provide literacy skills and knowledge to women, and to help them become self-reliant by providing skill training to run income-generating activities. The 18-month integrated literacy program is divided into three levels. When the GWE-PRA study began, the Basic Primary Education Project consisted of a nine-month basic-literacy course, followed by a six-month post-literacy course focusing on vocational skills, and concluded with three months of income generation and entrepreneurial activities. The first level, WEP I, aims to provide literacy skills (reading, writing and arithmetic) to women 15-45 years of age.

This basic-literacy course uses two textbooks, *Mahila Sakshyarato Pustika (Women Literacy Book)* and *Ghar Aangan (House and Courtyard)*. These books use the keyword approach, and classes run for nine months. WEP II is a six-month course offered to completers of basic literacy (WEP I). The objective of this level is to help women maintain their acquired literacy skills. The text, *Gaonbesi (Village and Valleys)* parts I and II, focuses on providing skills and knowledge in health and nutrition, agriculture, women and development, political awareness and income-generating activities. WEP III is a three-month course that uses the text *Hamro Ilam (Our Occupation)*. It aims to provide knowledge and skills in agriculture, environment, health, group formation, and income-generating activities. Upon completion of the three-month *Hamro Ilam* class, women participate in skills training that is provided by related government training centers. After this training, linkages are supposed to be established with micro-enterprise projects.

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[5] This is a separate program from Pact's Women's Empowerment Program (WEP).

The WEP is implemented through the BPEP unit in the District Education Office. The program coordinator, employed by BPEP under each District Education Officer, leads the unit. S/he is responsible for the district level program, including hiring local supervisors and facilitators at the community level.

3.1.2 Modifications to the BPEP Program Since GWE-PRA Data Collection

In late 1999, the BPEP program was reduced from 18 months to 12 months (6 months of basic-literacy and 6 months of post-literacy). Chapters in legal and political literacy were added to basic-literacy classes in 1999. Chapters on HIV/AIDS and STIs, and on legal literacy issues, were also incorporated in the post-literacy courses for both BPEP and HEAL in 1999 and are also part of the supplementary materials for the basic course book, *Naya Goreto (New Path)*. Changes were introduced to BPEP's WEP design in 2000, the third year of the GWE-PRA study. The program is currently 12 months long and includes a six-month basic-literacy course, followed by a three-month training course, and then a three-month post-literacy course. This change, however, occurred after the women in the GWE-PRA study completed their integrated literacy program provided by BPEP.

3.2 Health Education and Adult Literacy Program (9 Months)

3.2.1 HEAL Program Content During Data Collection Period

The HEAL program was developed in 1991 by World Education, with assistance from USAID, through John Snow, Inc. (JSI). The course was designed for Female Community Health Volunteers (FCHVs), Traditional Birth Attendants (TBAs), and the mothers with whom they work in rural communities throughout Nepal. The pilot program was launched from 1991 through 1993 in Makwanpur District of Nepal. Classes were discontinued in 1994. However, HEAL post-literacy classes were carried out from 1995 through 1997, with funding from USAID. These classes consisted of a three-month post-literacy course followed by a 12-month, self-study continuing education phase for participants who completed at least a six-month basic-literacy course (from the government or other I/NGOs).

In 1997, the HEAL model was revised, and the program now offers six-month basic-literacy classes, as well as its original three-month post-literacy course. The current cycle of USAID funding began in September 1997. The HEAL program strategy is to work with local NGO partners who implement integrated health literacy classes. World Education's implementing NGO partners in these districts are also supported through central-level INGO partners, The Asia Foundation (TAF) and the Center for Development and Population Activities (CEDPA).

The overall goal of the project is to "reduce fertility and to improve maternal and child health in Nepal through the provision of integrated literacy and health education courses for rural women" (HEAL proposal). The HEAL package is designed to provide knowledge to participating women on using sanitation and health care practices for themselves and their families, in addition to providing information about family planning services and STIs or HIV/AIDS preventive and controlling practices.

Under the current HEAL model, the program begins with a six-month basic-literacy class, using the textbook *Naya Goreto,* which uses the keyword approach. Each lesson begins with a small group discussion, led by participants, about a situation shown on a poster. The facilitator aids in the discussion by introducing keywords. The participants of the *Naya Goreto* classes are expected to gain knowledge and skills in reading, writing and arithmetic. Additional health messages are introduced twice a month by class supervisors who use supplementary materials on health and family planning issues.

At the time the GWE-PRA study was carried out, participants who completed the basic-literacy class were offered a three-month post-literacy course using the text *Diyalo (The Light).* This health education class focused on building the health knowledge of participants and helping them to continue to improve their literacy skills. Since 2000, bridging activities, such as community meetings, have been offered between the basic and post-literacy classes.

3.2.2 Modifications to the HEAL Program Since GWE-PRA Data Collection

Based on the discussions with World Education's partners, as well as on the results of HEAL program evaluations and information from the GWE-PRA Year 1 analysis, the HEAL program has undergone substantial modifications, and a number of new initiatives have emerged. In January 2001, HEAL program staff introduced a new program component. In areas where World Education's HEAL program and Girls' Access to Education (GATE[6]) program were running simultaneously, a meeting for the women participating in HEAL and the girls participating in GATE was organized. These intergenerational meetings aimed at increasing awareness about health issues, pertaining to women in general and to adolescent girls in particular. This program also aimed at providing a community forum for mothers and daughters to share health information and discuss current issues informally, and occurred once a month during the break between basic and post-literacy classes. Facilitators and supervisors provided voluntary facilitation services during these meetings where women and adolescent girls came together to discuss a variety of health issues including family planning and reproductive health, HIV/AIDS and girls' trafficking.

Additionally, World Education, through its partners, has been implementing "bridging activities." These activities provide women a place to continue practicing new skills and to discuss what is important to them. They are run in the villages where women have completed the HEAL basic-literacy phase and are waiting for the post-literacy phase of the project to begin three to four months later.

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[6] Since 1998 World Education has been implementing the Girls' Access to Education (GATE) Program. In GATE, out-of-school girls participate in a nine-month literacy course that integrates adolescent health and girls' empowerment information with literacy training.

In 2000, World Education facilitated the inclusion of the John Hopkins University/Population Communication Services (JHU/PCS) radio program for HEAL groups in Chitwan and Jhapa Districts during the period between basic and post-literacy. Women came together in their groups and listened to a radio show with a family planning and reproductive health story line. After listening to the show women discussed the content of the program. Beginning in September 2001, World Education and JHU/PCS began working together to provide 65 groups in Bardiya District with the same activity.

3.2.3 Program Contact Hours for Literacy Programs

3.2.3.1 Basic Literacy

A participant who completes the BPEP nine-month basic-literacy program is expected to have received 464 hours of instruction over 232 days. In contrast, a participant in HEAL is expected to attend classes for 130 days (for six months at six days a week, except in October and November), averaging 260 contact hours (see Table 5).

Table 5: Number of Basic Literacy Class Contact Hours by Program 1998-1999

	Oct[a]	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total[b]
BPEP										
No. of Days	26	24	27	26	25	26	26	26	26	232
No. of Hours	52	48	54	52	50	52	52	52	52	464
HEAL[c]										
No. of Days	-	9	27	26	25	26	17	-	-	130
No. of Hours	-	18	54	52	50	52	34	-	-	260

[a] The number of class hours varied during festival season (October and November) when classes often had to be re-scheduled due to the involvement of women in household rituals and preparations. Actual contact hours in these months were often lower than reported by official figures.

[b] Neither HEAL nor BPEP operated during the months of July, August and September because of the monsoon and planting.

[c] Classes for HEAL began in November and ended in April. No classes were held in October, May or June. Classes could, however, continue in the month of May if not completed or if re-scheduled due to reasons beyond the control of the participants or the facilitator.

3.2.3.2 Post Literacy

The BPEP post-literacy classes run for six months. Using an average of 26 days or 52 hours per month, as shown on Table 5 above, this calculates to a total of approximately 156 days or 312 hours of class time. The HEAL post-literacy classes run for three months or an average of 22 days or 43 hours per month as shown in the table. This calculates to a total of approximately 66 days or 129 hours of class time.

4. CHARACTERISTICS OF WOMEN IN THE SAMPLE

4.1 Personal and Family Background

The following background characteristics: women's age, number of children, home language, religious affiliation, and household socio-economic status, provide a profile of the women in the sample. Controlling for these variables enables a better understanding of differences that may exist among the analysis groups (control and experimental), literacy program affiliation (HEAL and BPEP) and course completion status. The final section of this paper presents a discussion of the overall impact of these characteristics on socio-economic indicators over a three-year period. Additionally, this section also presents an analysis of the inter-relationships between the control variables and the GWE-PRA indicators.

Even though (according to the research design) neither women in the literacy classes nor in the control group were supposed to have attended any prior literacy classes, analysis of the data revealed that about 24.7% of the women in the experimental group (189 women) and 2.7% (5 women) in the control group had attended literacy classes prior to GWE-PRA data collection.

Women in the sample in the eastern district of Jhapa were older, on average, (mean=35) than women in the sample in the western and far-western districts of Banke (mean=29) and Kailali (mean=27). A possible reason for the older average age of women in Jhapa is that the district has the fifth highest literacy rate in the country, and many of the younger women in the study (under 35) may have attended primary school and were, therefore, not included in the study.

Women in the study were from six districts of the Terai region: Jhapa, Dhanusha, Chitwan, Nawalparasi, Banke, and Kailali. They were asked several questions regarding their background characteristics, including their age, their age at marriage, the age at which they had their first child, and the age of each child. In Year 1, respondents' ages ranged from 15 to 65. Most of the women in the sample (95%) were between the ages of 15 and 45, the target age group of both HEAL and BPEP. All of the women in the study resided in rural areas and the traditional marriage systems, in which females marry at an early age, existed in a number of districts included in the study.[7] For example, the mean age at marriage in Dhanusha was 12.7 years, which was much younger than in other districts.

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[7] In some of the Terai castes/ethnic groups, including Yadav/Ahir and other Terai natives such as Mandal/Dhanuk, Teli, Musahar, Mukhiya, Dhobi, Sonar, Kewat, Kahar, and Sundi, a traditional marriage system includes three stages: 1) Gauna (below age eight)–an engagement with a boy; 2) Thauna (age 10–14)–girl goes to her husband's home and stays one night and then comes back to her natal home; and 3) Biha (three to five years after Thauna) when she starts living with her husband permanently. Most women consider their first engagement, Gauna, as their age at marriage, and, many reported ages ranging from two to nine as their age at first marriage.

Table 6 shows the mean (average) values on these characteristics.

Table 6: Women's Characteristics (Age, Marriage and Children) in Year One

	Mean Age of Women	Mean Age at Marriage	Mean Age at First Child	Mean Number of Children
Control Group (n=194)	31.4	15.5	18.9	3.29
Experimental Group (n=773)	31.4	14.9	18.5	2.98
Total (n=967)	31.4	15.0	18.6	3.04

As indicated by Independent Sample t-tests, on average, women in the control group married at a significantly older age (15.5 years) than women in the experimental group, for whom the average age at marriage[8] was 14.9 years. T-tests revealed no significant[9] differences between the experimental and the control group regarding the average age at which women had their first child. The average number of children of women in the control group was significantly[10] greater (3.29) than women in the experimental group (2.98).

Women were asked to report what language they usually spoke at home. Table 7 indicates that the experimental group consisted of roughly equal percentages of Nepali and non-Nepali speakers, but Nepali was the first language for only 35% of the women in the control group. These differences were statistically significant.[11]

Table 7: Women's Language Skills in Year 1

	Languages Spoken at Home					
	Nepali %	Tharu %	Maithali %	Hindi %	Bhojpuri/ Abadhi %	Others %
Control Group (n=194)	35.1	24.2	19.6	3.6	3.6	13.9
Experimental Group (n=773)	49.8	19.8	17.7	3.5	2.5	6.7
Total (n= 967)	46.8	20.7	18.1	3.5	2.7	8.2

By design, the sample only included women who were or had been married. Only a small percentage of women in the experimental (4.3%) or the control group (3.0%) were widowed, separated, or divorced in Year 3. The majority of the women in the experimental group (94.0%) and in the control group (96.9%) were living with their husbands. Among those women whose husbands were away, only a few stated that their husbands resided with second wives. Most of the husbands were away from home looking for work in Kathmandu or other places in Nepal or India.

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[8] t (2, 964) =1.93, p=.504.

[9] t (2, 886) =1.54, p=.123

[10] t (2, 965) =2.16, p=.031

[11] Chi Square x^2 (2, N=967) =14.04, p=.000.

Nepal is a Hindu kingdom, and officially over 86% of its population follow the Hindu religion. The next largest religious groups are Buddhists (8%) and Muslims (4%) (Central Bureau of Statistics, 1995). Of the total study sample, 93.1% were Hindu, and about 3.2% were Muslims. The others were Kirati (1.8%), Buddhists (1.1%), and Christian (0.8%) (see Table 8).

Table 8: Religious, Class and Ethnic Household Characteristics

	Experimental Group %	Control Group %	Total %
Religion			
Hindu	93.0	93.3	93.1
Muslim	3.2	3.1	3.2
Kirati	2.2	0.0	1.8
Buddhist	0.9	2.1	1.1
Christian	0.6	1.5	0.8
Castes/Ethnic groups			
Tharu	21.0	25.8	21.9
Brahmin	20.8	4.1	17.5
Chhetri	12.7	8.2	11.8
Other Hill Natives	11.1	21.1	13.1
Hill Occupational	9.2	8.2	9.0
Other Terai Natives	8.4	12.9	9.3
Terai Occupational	8.8	10.8	9.2
Yadav/Ahir	4.8	6.2	5.1
Muslims	3.2	2.6	3.1

n = 967 (experimental group n =773; control group n = 194)

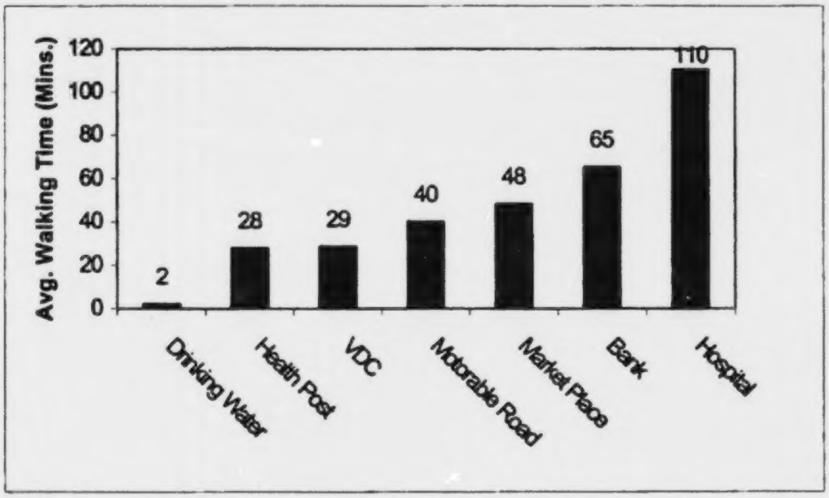
More than 30 castes/ethnic groups were identified by the GWE-PRA survey. The three castes/ethnic groups most represented in the sample were Tharu (21.9%), Brahmin (17.5%) and other hill natives (13.1%). For analysis purposes, some castes were grouped into categories similar to those used by the 1991 National Census.

The categories used in this data set included hill and Terai occupational castes and hill and Terai natives. The hill occupational castes were made up of those castes whose origin was in the hill regions of Nepal and who had specific occupations, such as making iron tools, sewing clothes and making shoes. About 9.0% of the sample were in this category, which included Kami, Damai or Sarki. Similarly, Terai occupational castes made up about 9.2% of the sample and included the following castes: Mandal, Dhanuk, Teli, Musahar, Mukhiya, Dhobi, Sonar, Kewat, Kahar, and Sundi.

Hill natives were made up of ethnic groups whose origins were in the hills and who had migrated to the Terai region. Thirteen percent of the sample was in this category, which included Tamang, Gurung, Magar, Rai, Limbu, Chepang, Newar, and Sanyasi. Terai natives, those groups who were indigenous to the Terai (identified as Rajbanshi, Rajput, Gupta/Baniya/Shah, Satar, Meche, Tajpuriya, and Kumhar) made up another 9.3% of the sample. Finally, 5.1% were identified as Yadav or Ahir. These two groups were also Terai native castes, but because they consider themselves to be from a very high caste and have different behaviors from other Terai castes, they were not classified as a Terai native caste. The remaining 3.1% were Muslims. Although Muslims have their own particular castes in Nepal, they are not usually identified by any particular caste or ethnic group.

4.1.1 Access to Facilities

The heads of household in the study were asked to report the walking time to various facilities from their home. Figure 3 shows the average walking times reported. Since BPEP, HEAL, and control groups were sampled from the same or from nearby areas, there was little variation in the reported times by group or program.



n = 967

Figure 3: Walking Distance to Facilities in Minutes

A wide range of times was reported. Respondents in the most remote or inaccessible villages included in this sample reported living up to six hours from the nearest hospital, six hours from the nearest market, four hours from a motorable road, and three hours from the nearest health post. About 41% of the households had their own drinking water source in their yard, about 56% had to walk up to ten minutes and about 2% had to walk for more than ten minutes to get water.

4.2 Socio-Economic Status (SES)

In examining the overall socio-economic status of the women in the study, a composite measure was created to rank the status of each woman on a common scale. The SES measure included household and agricultural assets, access to facilities, and the educational level of women and husbands or heads of household. The SES measure was a 13-point scale (ranging from 0-13 points). It included the following dichotomous variables, with 1 point for each response of "yes" and 0 points for each response of "no." The maximum possible score for each woman in the sample was 13.

Household assets:
1. Have a radio in the household
2. Have a television in the household
3. Have a bicycle in the household
4. Have drinking water source in own yard

Agricultural assets:
5. Family has own kitchen garden
6. Family owns land
7. Family owns livestock (cattle or buffaloes)
8. Woman has *pewa* (her own assets, like cash, land, livestock, or jewelry)

Access to facilities:
9. Have electricity in the household
10. Have access to toilet facilities

Educational level of family members:
11. Woman has received previous training
12. Husband/head of household is literate (has had some schooling)
13. Woman speaks Nepali language at home

As expected, respondents' socio-economic status did not change substantially during the three-year study. Consequently, baseline figures were used in all SES analyses. SES scores ranged from 0-12. A total of nine women had a score of 0 (the lowest) and two women had a score of 12 (the highest) in the sample. Baseline data indicated that experimental group women had a higher mean SES composite score (5.7) than women in the control group (4.6). Analysis using Independent Sample t-test revealed a significant difference between means.[12]

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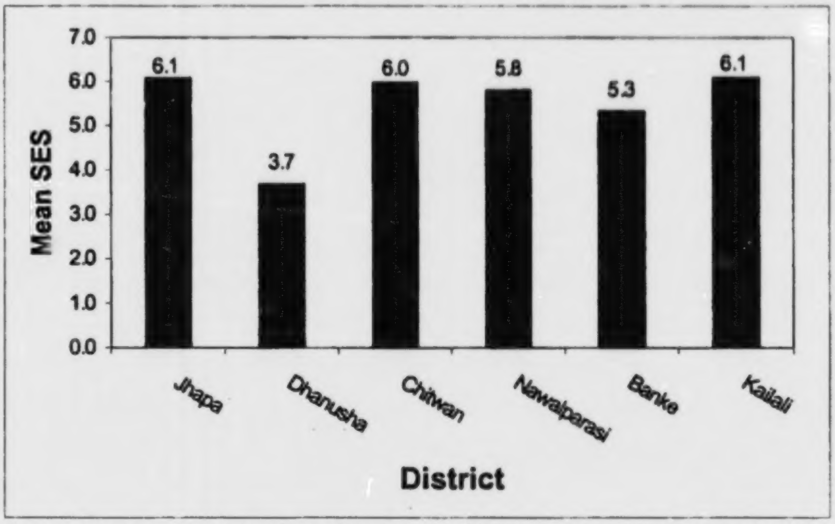
[12] $t\,(2, 164) = 2.08$, $p = .041$.

Figure 4 shows mean SES scores by district. With the exception of Dhanusha, which had a mean SES value of 3.7 SES scores were not substantially different across districts.



Total n = 967 (Jhapa n = 167, Dhanusha n = 174, Chitwan n = 160, Nawalpamsi n = 174, Banke n = 138, Kailali n = 154)

Figure 4: SES Score by District

4.2.1 Women's Educational Experiences

Table 9 presents the previous educational experiences of the experimental and control group women. An average of 24.7% of the experimental group women reported they had attended a literacy class before. For those who said that they had previously attended a literacy class, the average length of attendance was about 76 days. Only 24 women in the experimental group (3.1%) reported that they had attended primary school. The average number of years of attendance for these women was 3.0. None of the women in the control group had attended primary school.

Table 9: Percent of Women With Previous Literacy and Educational Experience in Year One

Type of Education	Percent of Women Attending		
	Experimental		Control
	BPEP (n=395)	HEAL (n=378)	(n=194)
Literacy class	23.8	25.7	2.6
Primary school	3.1	2.9	--
Other training	3.0	10.8	2.1

A total of 2.6% of the control group (five women) reported some participation in a previous literacy class. However, the average length of their participation in a literacy class was only four days, which is insufficient to have a major impact on their responses to the GWE-PRA survey. Only 5.9% of the women in the total sample reported having participated in some form of training. HEAL participants reported participating in more training over a longer time period than women in either the BPEP or the control group. Overall, the exposure to training programs was shorter for the control group than for the experimental group.

The exact number of women who previously attended a literacy class is not known, since some may have been afraid to report that they had attended a class because they were enrolled in a basic-literacy class designed for women with no previous literacy experience.

In-depth interviews supported the notion that respondents' previous literacy or school attendance may have been underreported. Several enumerators commented verbally and wrote in their field diaries that they were surprised to learn how many women stated that they had not participated in a literacy program previously, yet other family members, villagers, and/or local literacy class program personnel stated otherwise.

Facilitators and NGO staff were asked why they felt women would not reveal to the enumerators that they had participated in literacy classes in the past. The most common response was that the women were probably afraid that the program would "disappear" if they admitted to having already participated. The notion was that everyone knew these literacy classes were supposed to be comprised of women who had "never studied" before.

Another speculation by some villagers, program personnel, and field researchers (but not confirmed by any of the women themselves) was that some women did not want to admit they had participated in a literacy class before because they still could not read or write. They felt that if they revealed that they had participated in a class before, they would be expected to be able to read and write and were embarrassed to admit that they still could not do so. It is also possible that some women repeat literacy classes simply because they enjoyed the companionship of other women and were seeking opportunities for relief from the drudgery of their everyday routines of household chores and family responsibilities. It is not known whether they would have participated in such gatherings regardless of whether it were a literacy class or some other type of community activity.

A possible implication of this underreporting is that the time required to reach a certain level of literacy may be underestimated. However, this is difficult to assess, since for those women who previously attended a literacy class but failed to report it, there is no way of knowing the actual circumstances of their prior participation. For example, it is not known how often these women may have attended or for how long. Additionally, we do not know what circumstances (e.g., an illness or death in the family) may have led to their dropping out of the class.

However, because of the pre- and post-testing element of the research design, such underreporting does not pose a major threat to the validity of the results. While it may not be possible to determine with absolute certainty exactly how much literacy training a given individual has undergone prior to the literacy course, the level of each participant's literacy skills at the beginning of the study is known. Thus, it is possible to make inferences about the impact of varying degrees of literacy instruction participants received subsequent to the initial measurement.

4.2.2 Summary of Women's Characteristics

Women in both the experimental and the control group were similar with respect to a number of personal and family characteristics. In Year 1, the mean age in both groups was the same (31.4 years of age). However, on average, women in the control group had significantly more children (3.3) than women in the experimental group (3.0), despite the earlier age at which experimental group women married.

The official language in Nepal is Nepali, although over 35 distinct languages are also spoken. The GWE-PRA sample consisted of nearly equal percentages (50%) of Nepali and non-Nepali speakers in the experimental group, but a significantly smaller proportion (35%) of women in the control group women were Nepali speakers.

Nepal is a Hindu kingdom, and officially over 86.0% of its population follow the Hindu religion. Of the total study sample, 93.1% were Hindu, and about 3.2% were Muslims. The others were Kirati (1.8%), Buddhists (1.1%), and Christian (0.8%).

The three castes/ethnic groups most represented in the sample were Tharu (21.9%), Brahmin (17.5%) and other hill natives (13.1%). More than 30 castes/ethnic groups were identified in the survey. For analysis purposes, some castes were grouped into categories similar to those used by the 1991 National Census.

A composite measure of respondents' socio-economic status (SES) was calculated. Experimental group women had a significantly higher mean SES composite score (5.7) than women in the control group (4.6) in Year 1. However, the mean score for both groups was less than 6.5 in Year 1 (the mid-point on the composite scale).

5. FINDINGS

5.1 Persistence in BPEP and HEAL Programs

5.1.1 Overview

During the three years covered by the GWE-PRA, the boundary between HEAL and BPEP participants was not always clear cut. Some of the participants changed programs during the study, thus benefiting from both programs (see Table 4 in Section 2.5.5). Consequently, (except when assessing participants' persistence in the programs), results were not presented by program. For many of the analyses, respondents were grouped into categories[13] of "low," "medium" and "high" levels of literacy class participation, according to the extent of their participation in the literacy programs. Annex 1 provides a detailed description of how these categories were derived.

The primary research question addressed in this section was:

> To what extent did persistence in literacy classes differ by: 1) program, 2) previous literacy classes, 3) age, 4) language spoken at home, 5) socio-economic status and 6) district?

For all statistical tests carried out in this study, we assumed an *alpha* of .05 level of significance.

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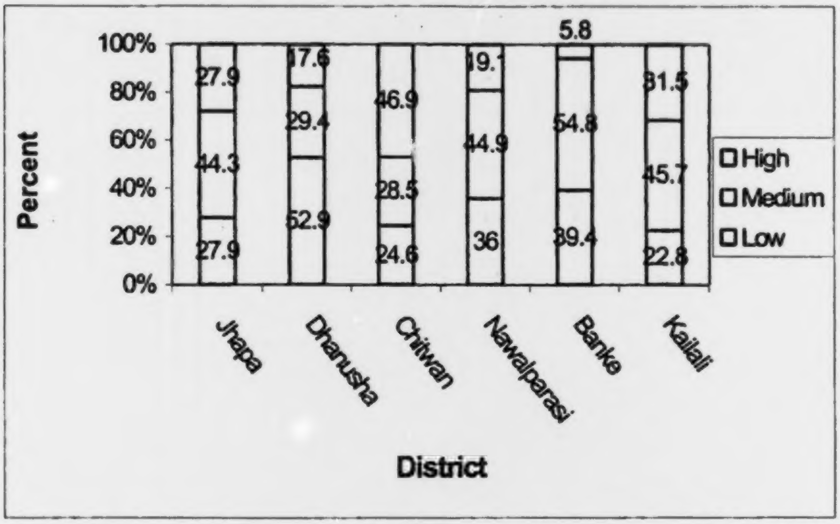
[13] The level of respondents' participation is a ratio calculated by dividing the number of months each respondent completed each year by the total number of months required to complete the program in which they were enrolled. This ratio was summed across the three years to provide a measure of total participation over the three years. This ratio was used instead of actual number of months of participation because the programs are structured such that six months of HEAL is considered to be roughly equivalent to nine months of BPEP.

5.1.2 Literacy Class Participation by District

Figure 5 shows the level of literacy class participation by district for women in the experimental group. As shown in this graph, the women in Chitwan District attained the highest levels of participation, with 46.9% completing the basic-literacy class plus additional classes in Year 2 and/or Year 3. Banke District had the smallest proportion of women who were able to achieve "high" levels of participation (5.8%). The women with the lowest levels of persistence were in Dhanusha District, where 52.9% were unable to complete at least half of the basic-literacy program.



Total n=773 (Jhapa n=140, Dhanusha n =136, Chitwan n=130, Nawalparasi n=136, Banke n=104, Kailali n=127)

Figure 5: Experimental Group Level of Literacy Class Participation by District

5.1.3 Factors Contributing to Level of Literacy Class Participation

Multivariate Linear Regression Analysis was carried out using the hierarchical method to test for the relationship between literacy class participation and: 1) program, 2) previous literacy class attendance, 3) age, 4) language spoken at home, and 5) SES.[14] Because the focus is on factors related to women's persistence in the program, the analysis excluded the 115 women who were "forced out" of the program during the first year because the classes ceased to function before they were completed. These women were included in all other analyses throughout this report.

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[14] Multivariate Regression Analysis could only be carried out for those variables that provided interval level data (age and SES) or that could be coded as "0" or "1," thereby serving as a proxy for interval data, using dummy variables. These included program, language and participation in previous literacy classes. District information could not be converted to this format. Women's years of primary school was not included because the number of women (24) who had attended the formal education system was too small to provide meaningful results.

Technical notes for the final model are contained in Annex 2. Regression results revealed that the program[15] in which women were participating explained about 7.4% of the variance in women's level of literacy class participation. Participation in the HEAL[16] program is positively correlated with the extent of women's participation in the literacy program. When the other variables were taken into consideration, an additional 3.4% of the variation was explained. Hence, a total of 10.8% of the variation in the extent of participation was explained by these five variables.

For the two continuous variables in the model (SES and age) we can predict the amount of increase expected for each unit increase in these variables. For example, for each increase of one unit in the 13-point SES score, we can expect an increase of .03 units in the literacy class participation ratio. This represents an increase of about 8 to 14 hours in the basic-literacy class (depending on whether participants were in the HEAL or BPEP program) or from 4 to 9 hours in the post-literacy class. Total program time required to complete the HEAL program is an average of 258 hours for the basic-literacy and 129 for the post-literacy program. Approximately 464 hours are required to complete BPEP basic-literacy classes and 312 hours for BPEP post-literacy classes. Hence, we see that, although the overall effect of SES on women's persistence in the literacy programs is statistically significant, SES explains only a small proportion of the variance, and the impact on the actual amount of time women spend in the classes is not very substantial.

Nevertheless, it is worrisome (though not unexpected) that women with the lowest levels of SES dropped out of the programs at a higher rate than other women, since this is the primary group that the programs were designed to serve. However, women at lower levels of SES must contend with numerous obstacles that lead to absenteeism and eventually dropout. They are often faced with the necessity of working long hours in the fields or in income-earning activities. Because of their limited resources, these women are generally more likely to become ill or stay home and care for children who are sick, and they are less able to purchase needed supplies (like pens, pencils and pads) once the initial supplies furnished by the program have run out. They also have little access to reading materials that allow them to practice what they have learned in the class.

Additionally, for each increase of one year in participants' age at baseline, we can expect an increase of .02 units in the literacy class participation ratio. This represents an increase of about 5 to 9 hours in the basic-literacy class (depending on whether participants are in the HEAL or BPEP program) or from 3 to 6 hours in the post-literacy class. Program staff contended that younger women often have child care, household and farming responsibilities that make it difficult for them to attend regularly. They also have the least decision-making power in the marital home. However, it must be kept in mind that the correlation between age and level of literacy class participation was small and, like all correlation analysis, was based on averages.

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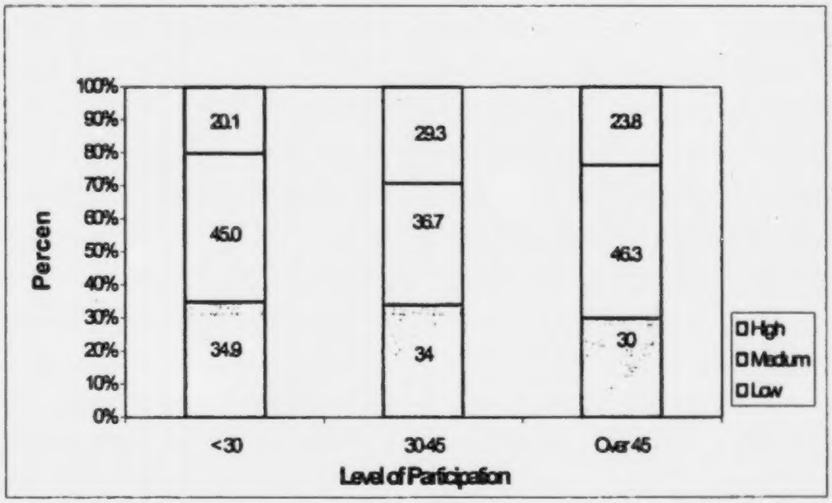
[15] This regression model, as well as subsequent models presented in this report, were run repeatedly, with variables in different order. The final model was run in the order of the variables with the highest correlation first, followed by those with lower correlation.

[16] It must be kept in mind that this regression analysis only examined the relationship between the program in which women started in Year 1. As described on Table 4 in Section 2.5.5, some women changed programs during the period.

The graph in Figure 6 shows the distribution by age group categories and levels of literacy class participation ("low," "medium" and "high"). As illustrated, the greatest percentage of women to attain "high" levels of literacy class participation (29.3%) was in the 30-45 age group. The group with the fewest women attaining high levels of literacy class participation was the under 30 age group (20.1%).



Total n=773 (Age Group <30 n=289, Age Group 30-45 n=403, Age Group Over 45 n=80)

Figure 6: Percentage of Women at Each Level of Literacy Class by Age Group

We concluded that these five factors (program, SES, language, prior literacy classes and age) do play a role in determining women's persistence in the literacy program. However, about 89.2% of the variation remains unexplained by this model. This indicates that other factors, as yet unidentified, play a substantial role in determining whether or not women persist in the literacy programs for longer periods of time. Information from in-depth interviews provides clues into these reasons, which may include factors such as lack of time due to family, household and work responsibilities, personal interest, level of class difficulty, the extent to which the classes met their personal expectations, satisfaction with the class itself and other factors. Of course, many of these factors are themselves related to SES, facility with language and choice of program. However, assessing reasons for women's dropout in the programs was not an intended focus of the research. Quantitative data needed to test for the significance of these other factors or to determine the extent to which they are contributing to women's persistence in the program were not available.

5.1.4 Summary of Persistence in Literacy Classes

Women's persistence in the literacy program was examined with respect to program, age, SES, language spoken at home, and district. Women in Dhanusha District demonstrated the lowest levels of participation in the literacy classes over the three years, with about 53% of the women in that district dropping out before completing even half of the basic-literacy program. Women in Chitwan District showed the greatest persistence in the classes, with about 47% of the women in that district completing basic-literacy classes and then continuing on to take additional classes in Year 2 and/or Year 3.

Additionally, the age of respondents and their persistence in the program are related. Regression analysis revealed that for each increase of one year in participants' age at baseline, we can expect an increase of .02 units in the literacy class participation ratio. This represents an increase of about 5 to 9 hours in the basic-literacy class (depending on whether participants are in the HEAL or BPEP program) or from 3 to 6 hours in the post-literacy class.

Women in the HEAL program had significantly higher levels of literacy class participation than women in BPEP. Their program affiliation explained about 7.4% of the variance in the level of literacy class participation. An additional 3.4% of the variation was explained by SES, language and previous literacy class participation. However, additional research is needed to identify other factors responsible for women's persistence in the programs.

5.2 Literacy Skills Assessment

5.2.1 Overview

As described earlier, a 49-item literacy skills test was administered to all of the women surveyed. Results were analyzed with respect to respondents' level of participation in literacy classes, SES, age, location, and language spoken at home. The following research questions were examined in this section:

1. Did women's literacy skills significantly improve from Year 1 to Year 3?
2. To what extent did women's participation in the literacy classes contribute to improvements in literacy skills during the three-year period?
3. To what extent do other factors such as level of participation in literacy classes, SES, age, district, and language spoken at home contribute to increases in literacy skills?

5.2.2 Literacy Skills of Women in the Experimental Group Compared to the Control Group

Table 10 compares mean literacy scores for women in the experimental group with those in the control group across the three years.

Table 10: Mean Literacy Scores by Group

	Mean Literacy Scores				
Group	Year 1	Year 2	Year 3	Year 1-Year 2 Change	Year 1-Year 3 Change
Experimental (n=773)	17.49	20.32	19.58	2.83	2.09
Control[a] (n=188)	4.44	4.83	5.01	0.39	0.57

[a] Six "outliers" in the control group whose literacy score increased by 20 points or more were excluded from the mean literacy score calculations. It is likely that these women were participating in a literacy class or another program with literacy training.

As shown on the above table, control group women scored lower on the literacy skills test initially, and this pattern continued over the three years. Independent sample t-tests of the *change* in literacy scores from Year 1 to Year 3 were carried out to compare mean improvement for the experimental group to that for the control group. Results indicated that improvements for the experimental group were significantly[17] greater than for the control group.

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[17] T-test results were: t (2, 959) =-21.68, p=.030.

5.2.3 Literacy Scores by District

Table 11 presents mean literacy scores, as well as changes in scores over the three years, by district for the experimental and the control group.

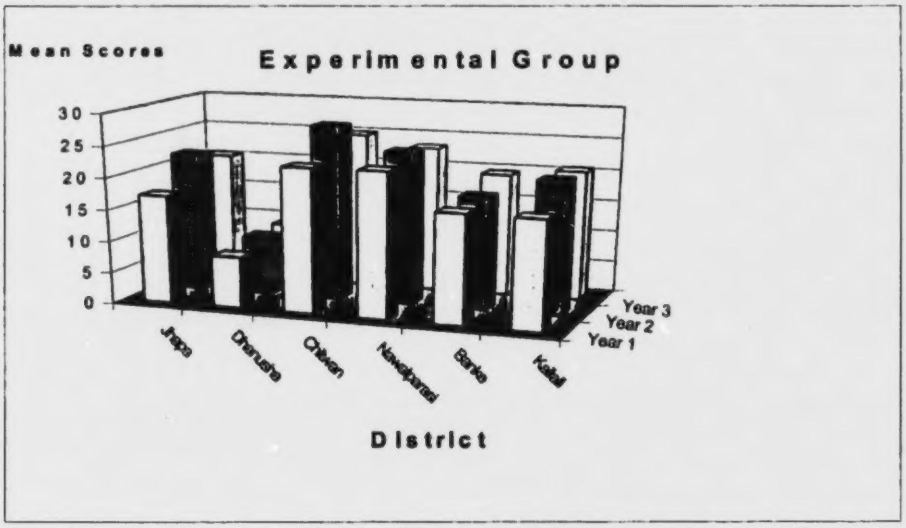
Table 11: Mean Literacy Scores by District

	Experimental Group[a]					Control Group[b]				
	Total Scores			Pt. Changes in Scores		Total Scores			Pt. Changes in Scores	
District	**Yr. 1**	**Yr. 2**	**Yr. 3**	**Yr. 1-2**	**Yr. 1-3**	**Yr. 1**	**Yr. 2**	**Yr. 3**	**Yr. 1-2**	**Yr. 1-3**
Jhapa	17.15	22.10	20.40	4.95	3.25	5.57	8.04	7.46	2.47	1.89
Dhanusha	8.16	9.18	9.22	0.97	1.06	3.58	3.55	4.05	-0.03	0.47
Chitwan	22.71	27.58	24.88	4.88	2.17	4.80	4.10	4.93	-0.7	0.13
Nawalparasi	22.80	24.05	23.18	1.25	0.38	5.63	5.66	4.71	0.03	-0.92
Banke	17.18	17.75	19.50	0.57	2.32	3.51	3.67	5.03	0.16	1.52
Kailali	17.06	20.87	20.58	3.81	3.52	3.73	4.69	4.38	0.96	0.65

[a] Total n=773 (Jhapa n=140, Dhanusha n =136, Chitwan n=130, Nawalparasi n =136, Banke n=104, Kailali n=127)

[b] Total n=188 (Jhapa n=26, Dhanusha n=38, Chitwan n=30 Nawalparasi n=35 Banke n=33, Kailali n=26)
test. Six "outliers" in the control group whose literacy score increased by 20 points or more were excluded from the mean literacy score calculations. It is likely that these women were participating in a literacy class or another program with literacy training.

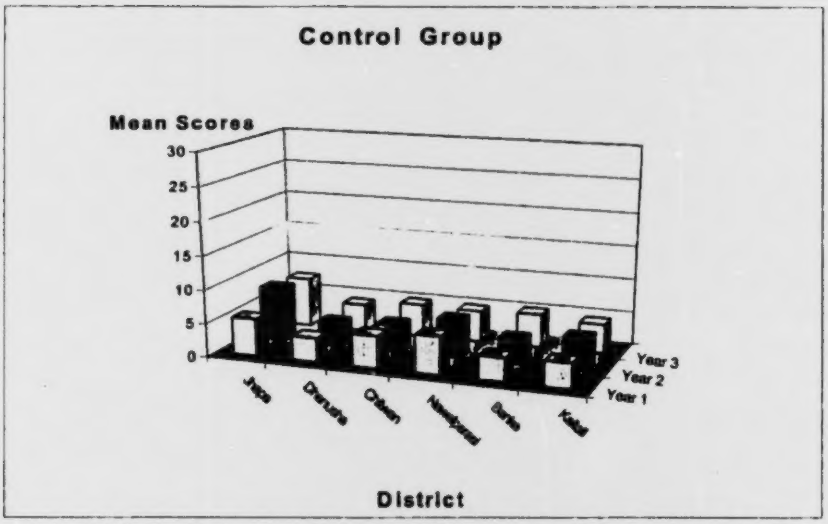
These scores are graphically depicted in Figure 7 and Figure 8. As shown in these graphs and on the preceding table, women in both the experimental and the control group scored lowest in all three years in Dhanusha District. As was discussed in Section 4.2, Dhanusha District also had the lowest SES values of any of the districts.



Total n=773 (Jhapa n=140, Dhanusha n =136,Total n=194 Chitwan n=130, Nawalparasi n =136, Banke n=104, Kailali n=127)

Figure 7: Experimental Group Mean Literacy Scores by District

In the experimental group, the scores were higher in Year 2 than in Year 3 for most districts. The highest scores in the experimental group were made by women in districts of Chitwan, Nawalparasi and Jhapa. The greatest improvement over the three years among experimental group women were made in Jhapa District and Chitwan District. In the control group the highest scores and the greatest gains were made in Jhapa District. However, the pattern of increases in Year 2, followed by slight decreases in Year 3 was not as evident among control group women.



Total n=188 (Jhapa n=26, Dhanusha n=38, Chitwan n= 30, Nawalparasi n =38, Banke n=34, Kailali n=27)

Figure 8: Control Group Mean Literacy Scores by District

Table 12 provides a district profile of findings related to levels of class participation, age, language, SES and literacy scores.

Table 12: District Profile of Women's Characteristics and Literacy Scores

	Jhapa (n=167) %	**Dhanusha (n=174) %**	**Chitwan (n=159) %**	**Nawalparasi (n=174) %**	**Banke (n=138) %**	**Kailali (n=154) %**
Level of Literacy Class Participation						
Control	16.2	21.8	18.8	21.8	24.6	17.5
Low	23.4	41.4	20.0	28.2	29.7	18.8
Medium	37.1	23.0	23.1	35.1	41.3	37.7
High	23.4	13.8	38.1	14.9	4.3	26.0
Nepali Spoken at Home	71.3	0	73.8	59.2	50.0	26.6
Age Group						
< 30 years	21.0	43.1	29.6	31.0	44.9	53.2
30-45 years	58.1	47.7	66.0	55.2	47.1	44.2
older than 45 years	21.0	9.2	4.4	13.8	8.0	2.6
	Mean	**Mean**	**Mean**	**Mean**	**Mean**	**Mean**
Mean SES Score (0-13)	6.1	3.7	6.1	5.9	5.3	6.0
Mean Literacy Score (0-49)						
Year 1	15.3	7.2	19.3	19.0	13.8	14.7
Year 2	20.0	7.9	23.2	20.2	14.5	18.3
Year 3	18.5	8.1	21.1	19.6	16.1	18.0

5.2.4 Factors Contributing to Changes in Literacy Scores

Multivariate Linear Regression Analysis was carried out using the hierarchical method to test for the relationship between changes in literacy test scores over the three years and: 1) participation in previous literacy classes, 2) the cumulative amount of literacy class exposure during the three-year period based on the literacy class participation ratio, 3) language spoken at home, 4) SES, and 5) age.

The regression model was initially run with all five variables. However, an examination of the correlation matrix revealed that neither SES nor age were significant predictors of increases in women's literacy scores, and these variables were dropped from the final model. Technical notes for the regression model are contained in Annex 3, which includes the correlation matrix for both the initial model (Table 3.3) and the final model (Table 3.4).

Participation in other literacy classes prior to the study, together with level of literacy class participation, explained about 6.0% of the variation in changes in literacy scores. About 2% of the variance proportion was explained by participation in previous literacy classes, and 4% by the cumulative amount of literacy class participation attained over the three years of the study. Language spoken at home explained an additional .02% of the variance. Altogether these three variables accounted for about 6.2% of the change in literacy scores.

Surprisingly, prior literacy participation was *negatively* correlated with changes in literacy scores. Although this result was somewhat puzzling, a possible explanation is that women who had participated in other classes signed up for the HEAL and BPEP classes because they had difficulty mastering their literacy skills in their first classes. These women, therefore, may have found it more difficult to achieve mastery of the HEAL and BPEP curricula than the other women in these two programs. Additionally, these women may not have had the opportunity to practice the literacy skills they developed after their programs were completed. Another explanation may be that some women who repeatedly took classes are participating for other reasons (e.g., as a means of socializing or interacting with other participants) and were less interested in developing their literacy skills than the women who were participating for the first time. However, neither of these hypotheses explain why their scores actually declined over the period, while the scores of those who reported that they had never previously participated in a literacy class increased.

The extent of women's participation in BPEP or HEAL is positively correlated with increases in women's literacy scores over the three years. For each unit increase in cumulative amount of literacy exposure (the literacy participation ratio), we can expect women's literacy scores to increase by 2.77 points over three years.

As noted above, the contribution of speaking Nepali at home toward explaining the variance in changes in literacy scores was very small (.02). However, it should be kept in mind that the dependent variable was *change* from Year 1 to Year 3. Hence, this figure reflects the amount of *improvement* that can be attributed to differences in language. A low correlation does not imply the lack of a relationship between language and literacy scores *per se*. For example, in Year 1, when participants were just beginning their literacy classes, the mean literacy score of women who spoke Nepali at home was significantly higher than for those who spoke another language (19.2 compared to 11.1). This continued to be the pattern in the final year of the study (Year 3) as well, with a mean literacy score of 21.9 for Nepali speakers compared to 12.46 for those who spoke another language at home.[18] A more in-depth analysis of these variables is presented in the sections that follow.

5.2.4.1 Literacy Scores by Subject and Level of Literacy Class Participation

Table 13 shows literacy scores for the reading, writing and mathematics portion of the literacy measure by respondents' level of participation in literacy classes over the three years. Overall, greater improvements were evidenced in reading and math than in the writing portion of the literacy assessment. Few women in the study improved their writing skills during the period, and the writing scores of women in the low and medium categories of literacy class participation actually declined.

Table 13: Mean Literacy Scores by Level of Literacy Class Participation

	Year 1	Year 2	Year 3	Year 1-2 Change	Year 1-3 Change
Reading (0-29)					
Control (n=188)	4.09	3.92	4.08	-0.17	-0.01
Low (n=262)	8.21	8.31	8.24	0.1	0.03
Medium (n=315)	12.73	14.15	13.82	1.42	1.09
High (n=196)	15.64	19.90	18.65	4.26	3.01
Writing (0-6)					
Control (n=188)	0.07	0.19	0.19	0.12	0.12
Low (n=262)	1.03	0.87	1.05	-0.16	0.02
Medium (n=315)	1.93	1.75	1.85	-0.18	-0.08
High (n=196)	2.63	2.74	2.52	0.11	-0.11
Math (0-14)					
Control (n=188)	0.26	0.72	0.74	0.46	0.48
Low (n=262)	2.36	3.16	2.79	0.80	0.43
Medium (n=315)	4.12	5.09	4.97	0.97	0.85
High (n=196)	5.02	7.15	6.77	2.13	1.75

Six "outliers" in the control group whose literacy score increased by 20 points or more were excluded from the mean literacy score calculations. It is likely that these women were participating in a literacy class or another program with literacy training.

This could be because more items were provided on the reading and math portions of the assessment, resulting in greater reliability of those two measures. However, assuming that the measures provide a relatively accurate assessment of writing skills, these data suggest that the BPEP and HEAL programs provide insufficient opportunities for participants to practice their writing skills during the course. Similarly, women in the control group who can write have few opportunities to use and improve their writing skills.

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[18] T-test results for Year 1 were: t (2, 851) =-8.74, p=.000; for Year 3: t (2, 869) -10.15, p=.000.

Generally, access to writing materials is limited in most communities, and many women do not have the materials needed to practice their writing. Free reading materials, such as books, brochures and pamphlets, on the other hand, are more readily available through literacy classes and other NGO programs. Women in the literacy programs are able to continue to use their literacy reading materials after the completion of the literacy classes, but once the pencils and paper are gone, women have to replenish these supplies themselves.

5.2.4.2 Literacy Scores and Age Group

Table 14 shows mean literacy scores of respondents categorized by level of literacy class participation and by age group in Year 1. As noted in the preceding section, when women's age was analyzed in conjunction with other variables, using Multivariate Linear Regression Analysis, no significant correlation was found. Simple Regression Analysis between women's age in Year 1 and their performance on the literacy test each year confirmed the absence of a strong relationship between age and women's scores on the literacy test.[19]

Table 14: Mean Literacy Scores by Age Group in Year One and Level of Literacy Class Participation

	Year 1	Year 2	Year 3	Year 1-2 Change	Year 1-3 Change
Under 30 Years of Age					
Control (n=63)	4.06	4.70	4.82	0.64	0.76
Low (n=101)	13.07	14.15	13.83	1.08	0.76
Medium (n=130)	19.72	21.87	21.98	2.15	2.26
High (n=58)	22.14	30.02	27.24	7.88	5.1
30-45 Years of Age					
Control (n=108)	4.39	4.44	4.72	0.05	0.33
Low (n=137)	11.00	11.49	11.23	0.49	0.23
Medium (n=148)	18.49	21.20	20.51	2.71	2.02
High (n=118)	25.10	30.89	29.33	5.79	4.23
Over 45 Years of Age					
Control (n=17)	6.17	7.77	7.47	1.6	1.3
Low (n=24)	8.92	9.79	9.58	0.87	0.66
Medium (n=37)	16.59	17.03	16.35	0.44	-0.24
High (n=19)	15.42	23.63	21.79	8.21	6.37

Six "outliers" in the control group whose literacy score increased by 24 points or more were excluded from the mean literacy score calculations. It is likely that these women were participating in a literacy class or another program with literacy training.

Though differences between age categories were not statistically significant, overall, women in the under 30 age group scored the highest on the literacy test and showed the greatest improvement over the three years. When the level of literacy class participation was taken into account, substantial improvements were observed among women in the over 45 age group (a mean gain of 6.4 points) when they persisted to achieve high levels of literacy class participation. This argues against a policy, which some have advocated, of offering literacy classes only to younger women. While adolescents and women in their early 20s are at an age when they are making critical life decisions and stand to benefit substantially from their involvement in literacy programs, major benefits can also accrue from providing such training to older women, as well. Women in the older age group are often mothers, mothers-in-law, and grandmothers, who shape the future of young girls through their influence over decisions concerning their age of marriage, their educational opportunities, and so forth.

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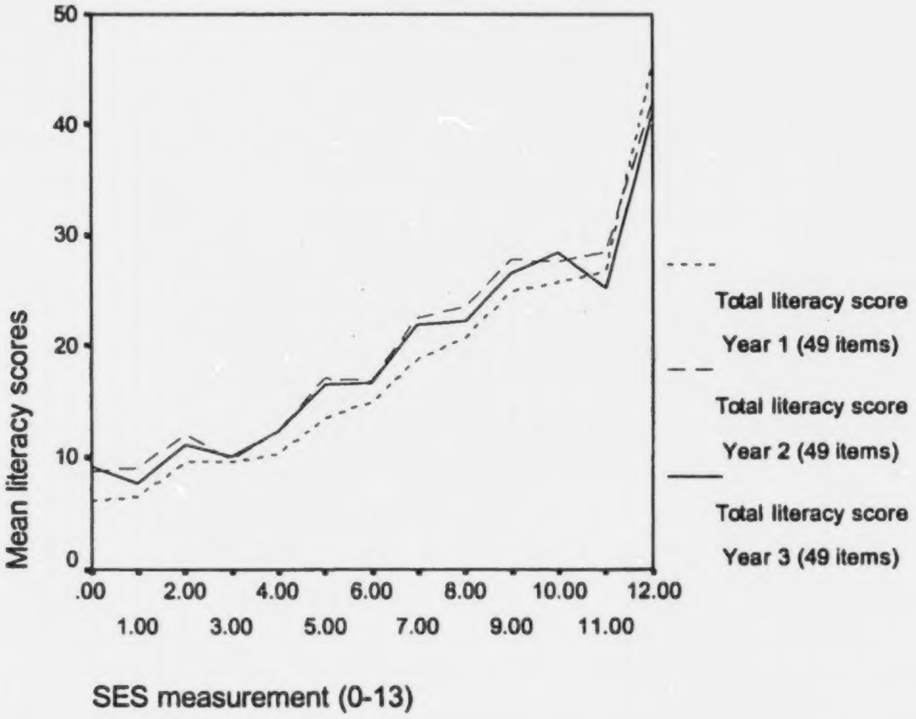
[19] Results of Simple Linear Regression analysis between age in Year 1 and the cumulative literacy class participation ratio were: for Year 1 r^2= .002, F(1, 965)=2.92, p=.088; for Year 2 r^2= .001, F(1, 965)=2.18, p=.187; for Year 3 r^2= .006, F(1, 966)=6.43, p=.011.

5.2.4.3 Literacy Scores and Level of SES

As indicated in Section 5.1.3, a positive correlation exists between level of SES and the extent of the women's participation in literacy classes over three years. Women with higher levels of SES were more likely to have higher levels of participation in literacy programs. However, as shown in Multivariate Linear Regression Analysis results in Section 5.1.3, no significant relationship exists between SES and *changes* in respondents' literacy scores from Year 1 to Year 3.

Nevertheless, this does not mean that SES and literacy performance are unrelated. A comparison of the two continuous measures of women's SES and women's literacy test scores revealed that a positive correlation exists between SES and performance on the literacy test.

The relationship between SES and the literacy level of the women (as measured by their score on the literacy test) is shown in Figure 9.



n=967

Figure 9: Mean Literacy Scores by Level of SES

have some responsibility for variation in respondents' initial literacy scores, it does not significantly affect whether they improve those scores over time.

5.2.5 Summary of Literacy Skills Assessment

Women's performance on a 49-item literacy test was examined with respect to whether they were in the experimental or the control group. In addition, the role of other factors, such as district, level of class participation, enrollment in previous literacy classes, language spoken at home, SES, and age were also considered.

Not surprisingly, women in the experimental group scored significantly higher on the literacy exam at the beginning of the study (within two to four weeks of the start of the literacy classes) as well as at the conclusion of the study (in Year 3) than women in the control group. More importantly, their improvements in literacy scores from Year 1 to Year 3 were significantly greater than for the control group. Hence, we concluded that participation in the BPEP or HEAL literacy program had a significant impact on their literacy skills.

In the experimental group, the highest literacy scores were made by women in the districts of Chitwan, Nawalparasi and Jhapa. Experimental group women who made the greatest improvement over the three years were in Jhapa and Chitwan Districts. All three of these districts (Chitwan, Nawalparasi, and Jhapa) had high percentages of women who spoke Nepali as their first language.

In the control group, the highest scores and the greatest gains were made in the Jhapa District. However, the pattern of increases in Year 2, followed by slight decreases in Year 3 was not as evident among control group women. Dhanusha District had the lowest scores in both the experimental and the control group. The differences between districts in performance on the literacy test were probably related to socio-economic status and language. Those districts with high levels of SES tended to score higher on the literacy exam than those with lower SES levels. However, SES did not appear to affect whether or not respondents showed *improvements* in their scores across the three years.

Women who spoke Nepali at home performed significantly better on the literacy test in all three years than those who spoke another language at home. Speaking Nepali at home had a small but significant impact on the extent to which women's literacy scores improved from Year 1 to Year 3. No strong relationship between age and literacy scores was found.

When levels of literacy class participation, SES, language spoken at home, participation in prior literacy classes, and age were considered together, the factor contributing the most to improvements in literacy scores over the three years was level of literacy class participation. Level of literacy class participation explained about 4% of the variation in scores, followed by previous participation in literacy classes (which was negatively correlated with improvements in literacy scores). Prior participation explained about 2% of the variation, and language spoken at home explained only .02% of the variation in scores.

5.3 Health Knowledge and Practices

5.3.1 Impact of Literacy on Health Care Knowledge and Practices

A number of studies carried out in Nepal have found that attending literacy classes can increase women's knowledge of health-related issues and increase their decision-making power within the family regarding health-related needs (Reinhold, 1993; Comings, et al., 1994; Save the Children/US, 1997; Smith, 1997). Some program evaluations concluded that female participation in literacy courses can improve the health of the whole family by leading to better sanitation and nutrition practices and increasing the likelihood that children will be immunized (Save the Children/US, 1997; Smith, 1997).

However, studies cannot always tease out and isolate possible factors that may lead to desired behavioral change. Positive changes in health practices among literacy class participants may result from a combination of literacy and other development interventions, such as health programs or classes (Smith, 1997).

One area in which research has demonstrated that nonformal education and literacy courses can have an impact is reproductive health. In Tanzania, for example, participants in adult education programs were found to know more about family planning and to hold more positive attitudes toward family planing methods and use them more frequently than their peers who had not participated in classes (Carr-Hill, 1991). In Nepal, Burchfield (1997) found that women who attended literacy classes had greater control over decisions regarding family size and child spacing than women who did not attend classes. CEDPA (1995) reported that literacy course participants were more likely than other women who did not attend literacy class to discuss family planning with their spouses, more likely to utilize family planning and more likely to participate in decisions concerning the desired number of children. Finally, research suggests that integrated programs that combine literacy instruction with a health curriculum have a greater impact on women's health practices than literacy courses without the specific health component (Smith, 1997).

This section was guided by the following research questions:

1. Did women's health knowledge and practices significantly improve from Year 1 to Year 3?
2. To what extent did women's participation in the literacy classes contribute to improvements in health knowledge and practices during the three-year period?
3. To what extent did other factors, including age, district, previous literacy class participation, literacy skills, level of literacy class participation, SES and language have an impact on changes in women's health knowledge over the three year period?

5.3.2 Composite Measure of Health Knowledge

To measure women's overall health knowledge over time, a composite measure (ranging from 0-9 points) was created. Multiple variables were selected on the basis of three main criteria: 1) same scaling, 2) positive correlation among the variables and 3) normal distribution of the variables. The composite was a non-weighted, reliable and continuous measure that captures the various components of the construct of "health knowledge."

The following dichotomous variables with one point for each "yes" and zero for each "no" were included in the composite to create the "health knowledge" construct.

1. Knowledge of sources of vitamin A
2. Heard of ways of delaying pregnancy
3. Heard of family planning
4. Knowledge of reasons for family planning

5. Heard of STIs
6. Knowledge of ways of preventing STIs
7. Heard of HIV/AIDS
8. Knowledge of ways of preventing HIV/AIDS
9. Knowledge of importance of immunization

To determine whether all the variables in the composite were contributing to the overall composite or construct, a reliability test was performed. From this test it was found that all the variables included in the construct were positively correlated and the overall *alpha* levels for years one, two and three, respectively, were 0.75, 0.77 and 0.78. These nine dichotomous variables were then summed to compute a construct, namely, "Women's Level of Health Knowledge" and tested for normality of the distribution.

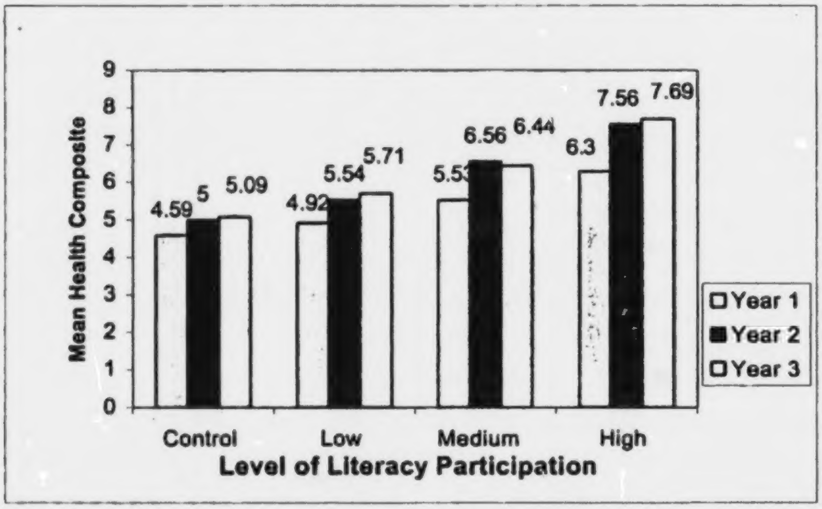
5.3.3 Factors Contributing to Increases in Health Knowledge

Multivariate Linear Regression Analysis was carried out using the hierarchical method to test for the relationship between changes in the health knowledge composite over the three years and: 1) participation in previous literacy classes, 2) the cumulative amount of literacy class exposure during the three-year period, based on the literacy class participation ratio during the three-year period, 3) performance on the Year 3 literacy test, 4) language spoken at home, 5) SES, and 6) age.

The regression model was initially run with all six variables. However, an examination of the correlation matrix revealed that of these variables, only the cumulative amount of literacy class exposure (the literacy class participation ratio) and literacy test score were significantly correlated with increases in the health knowledge composite. Technical notes for the regression model are contained in Annex 4, which includes the correlation matrix for both the initial model (Table 4.3) and the final model (Table 4.4).

Although significant, the contribution of these two variables toward explaining variation in changes in health knowledge was relatively small. The level of literacy class participation, together with Year 3 literacy test scores, explained about 2.8% of the variation in changes in the health composite score. About 2.3% of the variance proportion was explained by level of literacy class participation and 0.5% by performance on the literacy test. For each unit increase in the literacy class participation ratio, we can expect an increase of .49 points in the health composite score (on a 9-point scale) over a three-year period. For each unit increase in literacy score, we can expect an increase of .01 points in the health composite score.

Figure 10 graphically depicts the distribution of women's mean level of health knowledge by their level of literacy class participation.



n=967 (Control n=194, "Low" n=262, "Medium" n=315, "High" n=196)

Figure 10: Women's Health Knowledge Mean Composite Scores by Level of Literacy Class Participation

Analyses of individual health knowledge questions that form the basis of this composite, as well as questions about respondents' health practices are analyzed in sections that follow. Throughout this study, McNemar's Test of Correlated Proportions was used to test for significance between Year 1 and Year 3, rather than the more commonly known Chi Square test. This test was selected for two reasons: 1) it is more appropriate when pretest-post test designs are used with dichotomous variables; and 2) it is based on actual changes in, rather than average beginning and ending values.[20] However, it is important to remember that Year 1 and Year 3 comparisons throughout this report are comparisons between single variables. Statistically significant differences may, in fact, be attributed to other factors, as illustrated when other variables are controlled for using regression analysis. Consequently, the results of single variable comparisons must be viewed with caution.

5.3.4 Use of Vitamin A Knowledge and Practices

According to the World Health Organization, worldwide, three million children suffer clinical vitamin A Deficiency (VAD), exhibiting the signs and symptoms of eye damage and xerophthalmia.[21] It is estimated that 140-250 million children under five years of age are at risk of sub-clinical VAD, mainly in Asia and Africa. Though showing none of the ocular signs or symptoms these children suffer a dramatically increased risk of death and illness, particularly from measles and diarrhea, as a consequence of VAD. Long known to be a principle cause of childhood blindness (250,000-500,000 children lose their sight each year), VAD is now recognized as a major contributing factor in an estimated one to three million child deaths each year. Vitamin A is essential for the functioning of the immune system and the healthy growth and development of children.[22]

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[20] For a detailed discussion of this test see Levin and Serlin, 2000).

To assess whether women were aware of the types of food that provide good sources of vitamin A, they were asked to list the sources of vitamin A they knew about. Acceptable responses included green leafy vegetables, bright yellow fruit, pulses/beans, meat/fish, milk and milk products, eggs, liver, and breast milk. Significant increases from Year 1 to Year 3 in the proportion of women who could list sources of Vitamin A were found for both the control group and the experimental group.[23] Similarly, significant increases were found at each level of literacy class participation.[24]

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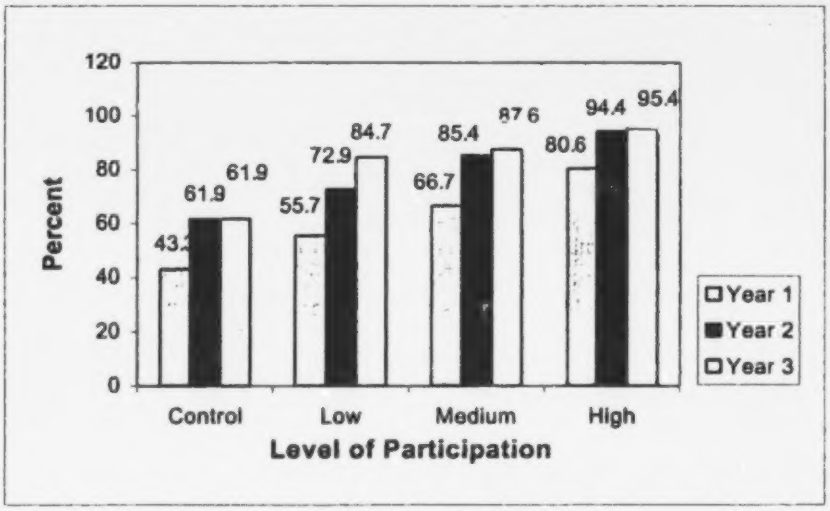
[21] The term xerophthalmia literally means "dryeye." However, dryness or xerosis, which also affects other parts of the body, is only part of the abnormal process undergone by the eye in vitamin A deficiency. Xerophthalmia is synonymous with all of the clinical signs and symptoms that affect the eye in vitamin A deficiency. http://www.sightandlife.org/sightandlife/info/manual2ed/05SaLMan.pdf.

[22] Excerpted from the World Health Organization website at http://www.who.int/vaccines-diseases/en/vitamina/science/sci02.shtml.

[23] For change in knowledge of sources of Vitamin A for the Control Group, McNemar's x^2=(2, N=194), p=.000; for the Experimental Group, McNemar's x^2=(2, N=773), p =.000.

[24] For change in knowledge of sources of Vitamin A "Low" levels McNemar's x^2=(2, N=262), p=.002; for "Medium" levels McNemar's x^2=(2, N=315), p=.000; for "High" levels McNemar's x^2=(2, N=196), p=.000.

Figure 11 shows the proportion of women at each level of literacy class participation who were able to identify at least one source of vitamin A.



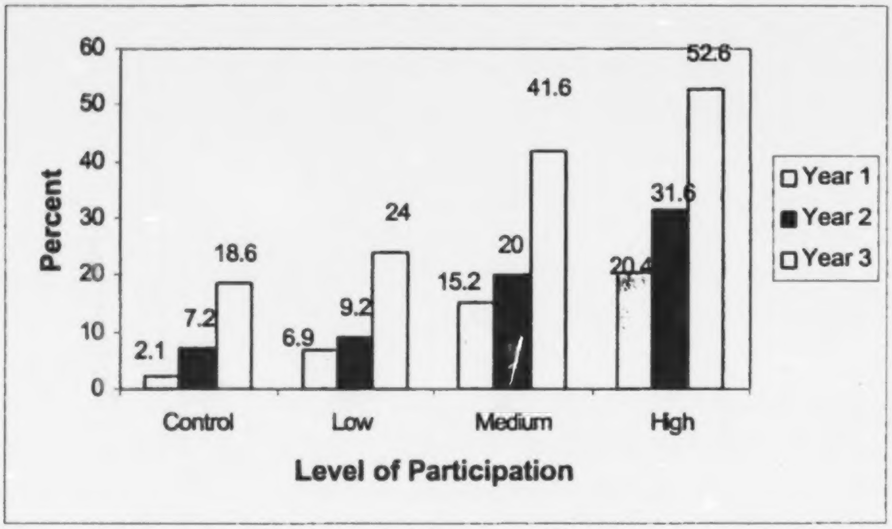
Total n=967 (Control n=194, "Low" n=262, "Medium" n=315, "High" n=196)

Figure 11: Percentage of Women Who Could Identify Sources of Vitamin A by Level of Literacy Class Participation

These results are not surprising given the strong emphasis both the government and nongovernmental organizations have placed on disseminating primary health care messages about vitamin A in the rural areas since 1980, through programs such as the Ministry of Education's National Vitamin A Program. Although it is not possible to determine which of these programs is responsible for the increased knowledge, it is likely that the programs work together to provide a cumulative impact. Literacy class participation helps reinforce the information acquired and enables the women to contextualize their knowledge better.

The simple provision of high-dose Vitamin A supplements every 4 to 6 months not only protects against blindness but also has been repeatedly shown to have a dramatic and multiple impact on the health of young children (6-59 months). Women in the GWE-PRA study who had children age 6-59 months were also asked to report if they had provided vitamin A capsules to their children.

As shown in Figure 12, the proportion of women who said that they gave their children vitamin A capsules increased significantly from Year 1 to Year 3 for both the experimental and the control group.[25] Year 1 to Year 3 differences were significant for women who attained the "medium" level of literacy class participation but not for women at other levels.[26]



Year 1 Total n=465 (Control n=108, "Low" n=129, "Medium" n=137, "High" n=91)
Year 2 Total n=338 (Control n=81, "Low" n=98, "Medium" n=96, "High" n=63)
Year 3 Total n=362 (Control n=92, "Low" n=102, "Medium" n=113, "High" n=55)

Figure 12: Percentage of Women (with Child 6-59 Months) Who Gave Vitamin A Supplements[27]

It appears from these data that the multiple efforts of a range of programs and campaigns are having an impact on women's use of vitamin A supplements for their children. It is not possible to tell which of these programs bear the greatest responsibility for changes in women's behavior related to use of vitamin A supplements.

5.3.5 Family Planning Knowledge and Practices

The Nepali government has been actively involved in both information and dissemination of contraceptives since about 1968. Furthermore, a number of INGOs and NGOs have played a role in spreading family planning messages and services. The focus of family planning programs has been primarily on use of family planning methods. Female sterilization is still common, and the percentage increase in the use of this method is higher than any other method over the past 20 years. However, *Nepal Family Health Survey* (*NFHS)* data indicated that the use of modern methods has been steadily increasing as well (*NFHS*, 1996). These survey data show that knowledge of family planning in Nepal is quite high, with 98% of ever-married women who were interviewed demonstrating that they knew about at least one method of family planning.

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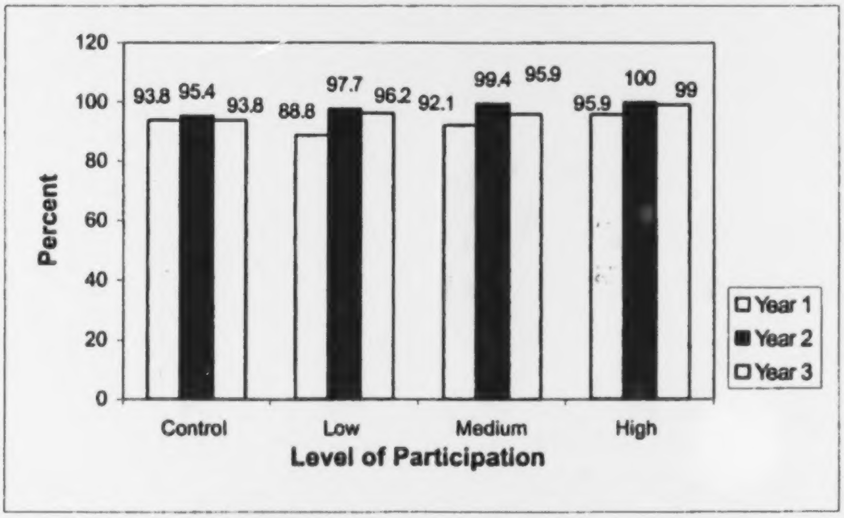
[25] For the Control Group McNemar's x^2=(2, $\underline{N}$=82), $\underline{p}$ =.001; for the Experimental Group, McNemar's x^2=(2, $\underline{N}$=223), $\underline{p}$=.000.

[26] For women attaining a "Low" level of participation, McNemar's x^2=(2, $\underline{N}$=89), $\underline{p}$=.210; for "Medium" level McNemar's x^2=(2, $\underline{N}$ =86), $\underline{p}$ =.003; for "High" level McNemar's x^2=(2, $\underline{N}$ =48), $\underline{p}$=.065.

[27] Percentages are based on the number of women with children age 6-59 months.

Women in the GWE-PRA study were asked three questions to measure their knowledge of family planning: 1) Have you ever heard about family planning? 2) Have you ever heard of methods to avoid or delay pregnancy? and 3) Can you give any reasons why someone would use family planning?

Although the GWE-PRA survey figures were not quite as high as in the earlier *NFHS*, a large proportion of women in the study had already heard of family planning when the research began. In Year 1, at the beginning of their participation in literacy classes, most women in both the experimental and the control group indicated that they had heard about family planning (*pariwar niyojan*) (see Figure 13).



Total n=967 (Control n=194, "Low" n= 262, "Medium" n=315, "High" n=196)

Figure 13: Percentage of Women Who Had Heard About Family Planning by Level of Literacy Class Participation

In the experimental group, the proportion who had heard of family planning increased significantly[28] from Year 1 to Year 3. By comparison, about the same proportion of women in the control group had heard about family planning in Year 3 as in Year 1. Increases were greatest among women who attained "low" levels of participation, which was the only group for whom differences from Year 1 to Year 3 were statistically significant.[29] However, this is the group that started out with the lowest proportion (88.8%) of women with family planning knowledge. Women in the "high" literacy class participation group already had a high level of knowledge when the research began in Year 1 (95.9%) and this group reached almost 100% by Year 3.

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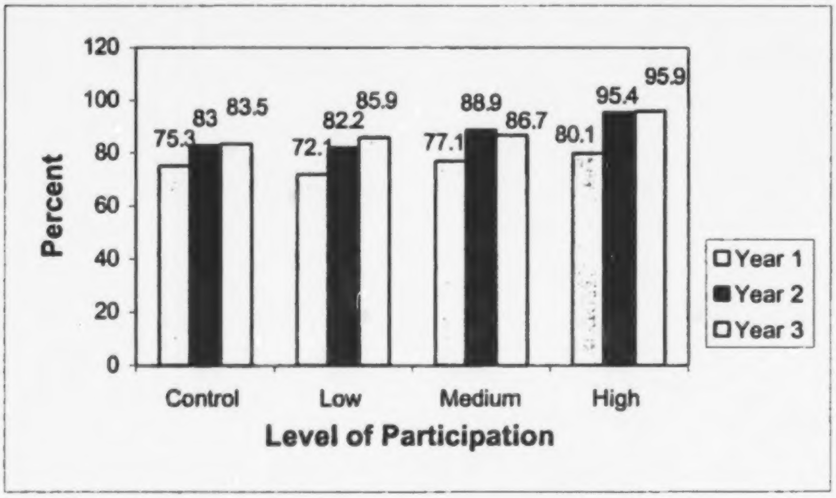
[28] For the Control Group, McNemar's x^2=(2, N=194), p=1.000; for the Experimental Group, McNemar's x^2=(2, N=771), p =.000.

When the question was worded a bit differently, similar results were obtained. However, the proportion of women in each group who had heard about methods "to delay or avoid pregnancy" was slightly smaller than for women who said they had heard about family planning (see Figure 14).



Total n=967 (Control n=194, "Low" n=262, "Medium" n=315, "High" n=196)

Figure 14: Percentage of Women Who Had Heard About Methods to Avoid or Delay Pregnancy by Level of Literacy Class Participation

At baseline (Year 1), a fairly high percentage of the women across all groups already had an understanding of reasons for using family planning methods. When asked why one would use family planning, a high percentage of the women were able to provide at least one appropriate response, including "to avoid pregnancy," "birth spacing," or "to prevent diseases."

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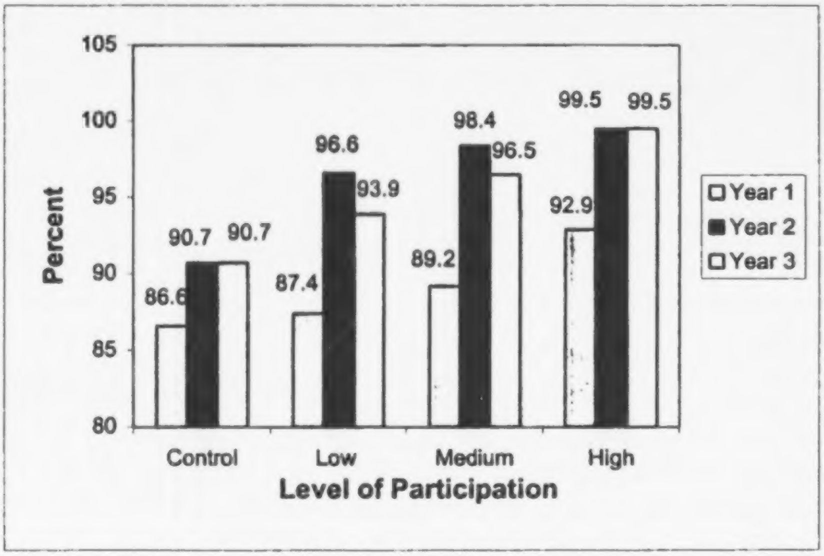
[29] For "low" levels McNemar's x^2(2, N=260), p=.002; for "medium" levels McNemar's x^2(2, N=315), p=.058; for "high" levels McNemar's x^2(2, N=196), p=.109.

Figure 15 shows the percentage of women at each level of literacy class participation who were able to provide one of the above reasons for using family planning. As shown on this graph, the women with the least knowledge in all three years were those in the control group, and the ones with the most knowledge were women who attained "high" levels of participation. Increases from Year 1 to Year 3 in the proportion of women who could provide reasons for using family planning were statistically significant[30] for the experimental group but not for the control group. Additionally, differences were significant for[31] all levels of literacy class participation.



n=967 (Control n=194, "Low" n=262, "Medium" n=315, "High" n=196)

Figure 15: Percentage of Women Who Could Cite Reasons for Family Planning by Level of Literacy Class Participation

Although it was not possible to directly measure women's use of family planning methods, respondents were asked whether they practiced any "temporary" methods of family planning, such as condoms, pills, injections, Norplant, Copper Ts (IUDs), diaphragm, foam, or jelly.

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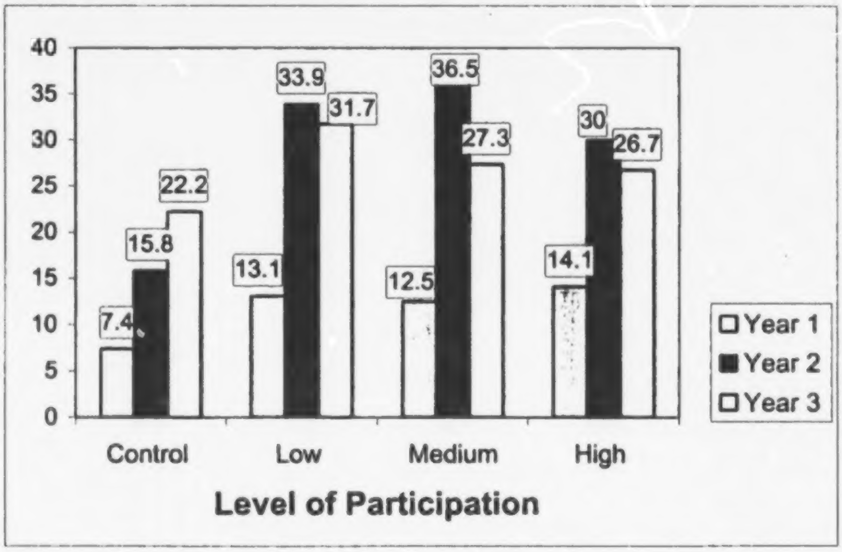
[30] For the Control Group McNemar's x^2=(2, N=194), p =.243, for "Experimental Group " McNemar's x^2=(2, N=770), p =.000; for "Medium" level McNemar's x^2=(2, N =314), p =.001; for "High" level McNemar's x^2=(2, N =196), p=.001.

[31] For "Low" level McNemar's x^2=(2, N=260), p =.032; for "Medium" level McNemar's x^2=(2, N =314), p =.001; for "High" level McNemar's x^2=(2, N =196), p=.001.

Figure 16 depicts reported use of family planning methods for women under 46 years of age over the period. As shown, women in the control group were less likely to report using family planning methods in all three years than women participating in the literacy classes.



Year 1 Total n=473 (Control Group n=108, "Low" n=130, "Medium" n=136, High n=99)
Year 2 Total n=207(Control Group n=57, "Low" n=59, "Medium" n=52, High n=40)
Year 3 Total n=247 (Control Group n=54, "Low" n=63, "Medium" n=59, High n=45)

Figure 16: Percentage of Women Under 46 Years Old Using Family Planning Methods[32]

However, the proportion of women who reported using family planning methods did not significantly[33] change in either the experimental or the control group. Similarly, the proportion of women using family planning methods did not significantly[34] increase in any of the levels of literacy class participation over the period.

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[32] Figures are based on the valid percent. Women who were not using family planning because they were widowed, divorced post-menopausal or they or their husbands were sterilized were coded as "not applicable" and excluded from the analysis.

[33] For the Control Group McNemar's x^2=(2, $\underline{N}$=54), $\underline{p}$ =.388, for the Experimental Group, McNemar's x^2=(2, $\underline{N}$=167), $\underline{p}$ =1.000.

[34] For the Control Group McNemar's x^2=(2, $\underline{N}$=54), $\underline{p}$ =.388, for "Low" level McNemar's x^2=(2, $\underline{N}$=63), $\underline{p}$ .607; for "Medium" level McNemar's x^2=(2, $\underline{N}$ =59), $\underline{p}$ =1.000; for "High" level McNemar's x^2=(2, $\underline{N}$ =45), $\underline{p}$=.804.

5.3.6 STIs and HIV/AIDS

The Joint United Nations Program on HIV/AIDS (UNAIDS) and the World Health Organization (WHO) estimates that 40 million adults and children were living with HIV by the end of 2000. During 2001, it is estimated that 4.2 million people became infected with HIV, and another 2.4 million died from HIV/AIDS. The overwhelming majority (95%) of people with HIV live in developing countries. That proportion is expected to increase even more as infection rates continue to rise in countries where the spread of the virus is perpetuated by poverty, poor health systems and limited resources for prevention and care.[35]

Since the mid-1980s, women around the globe have been increasingly affected by the spread of HIV/AIDS. Worldwide, over half of the 4,000 adults infected daily with AIDS in 1997 were aged 15-24, and 40 percent were women. The increase in AIDS among young women is largely the result of women's relative powerlessness in many societies. Increasing women's autonomy and power, and access to education, reproductive health care and economic resources are all key to combating AIDS.[36]

In Nepal, though the absolute number of HIV/AIDS cases is still low, there are already "concentrated" epidemics within certain high-risk behavior groups. Without a concerted and coherent response, Nepal is confronting the real possibility of devastating social and economic effects of the kind of full-blown HIV/AIDS epidemic seen in other countries. Immediate and vigorous action must be taken now to prevent further spread of HIV among groups at high risk and curb the infection from taking a foothold in the larger population.

In response to the growing problem of HIV/AIDS and other STIs both the HEAL and BPEP programs have added components dealing with these issues to their curriculum in recent years. Classroom discussions and textbooks used in these programs include topics about a range of family health issues, including these topics. In the HEAL program, an entire chapter is devoted to HIV/AIDS and other STIs. Questions about STIs and HIV/AIDS were included in the survey to assess the women's knowledge of relevant health messages. The term HIV/AIDS seemed to be better known than the term for STIs (*Yaunrog* in Nepali). Figures 17 and 18 show a clear pattern of increasing knowledge of both STIs and HIV/AIDS among literacy class participants during the three years.

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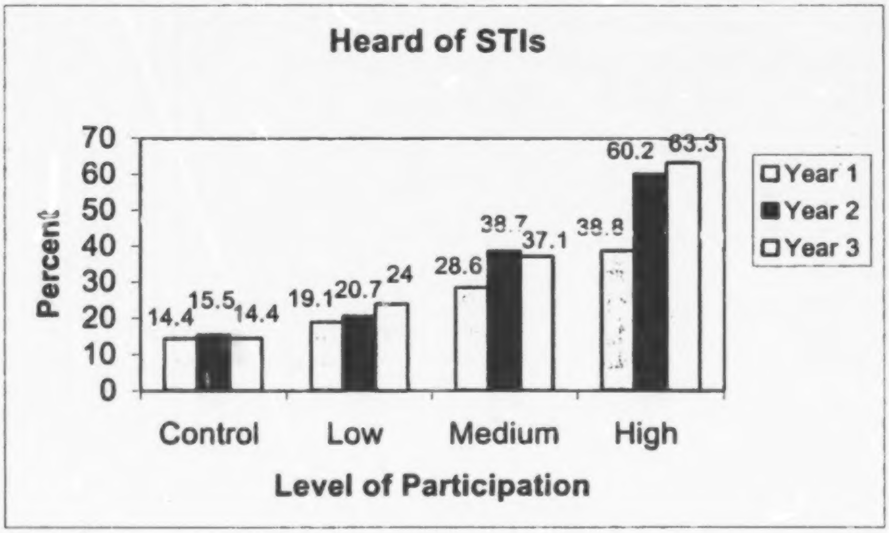
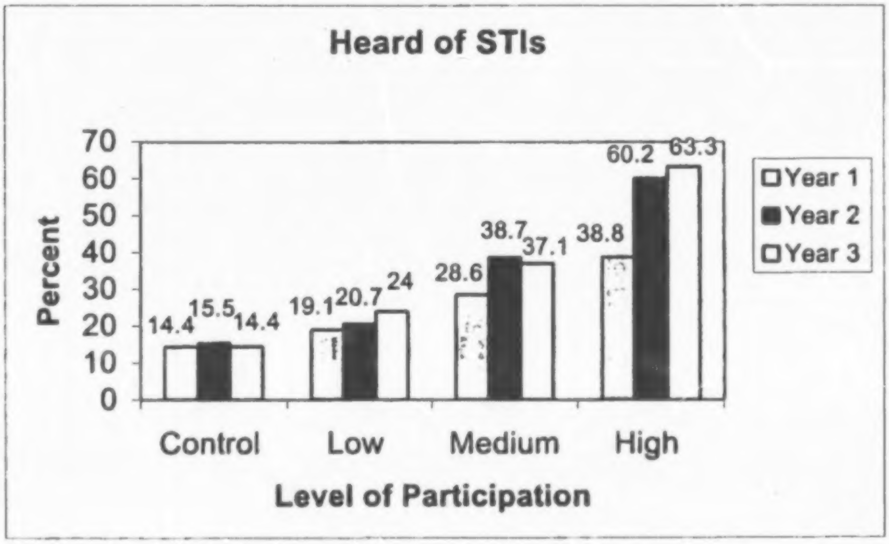
[35] AVERT. 2001. ***World HIV and AIDS Statistics Worldwide.*** http://www.avert.org/worldstats.htm These figures are estimates at the end of 2001, published by UNAIDS in the "Report on the Global HIV/AIDS Epidemic, July 2002."

[36] Facing the Future: People and the Planet. 2000. *Economic and Social Impacts of Population Growth.*



Total n=967 (Control n=194, "Low" n=262, "Medium" n=315, "High" n=196)

Figure 17: Percentage of Women Who Have Heard of STIs by Level of Literacy Class Participation



Total n=967 (Control n=194, "Low" n=262, "Medium" n=315, "High" n=196)

Figure 18: Percentage of Women Who Have Heard of HIV/AIDS by Level of Literacy Class Participation

The proportion of women who had heard of STIs in the GWE-PRA study remained the same from Year 1 to Year 3 for the control group but increased significantly for women in the experimental group.[37] Similarly, from Year 1 to Year 3, the proportion of women who had heard of STIs increased for all three levels of literacy class participation in the experimental group. Differences were statistically significant[38] for women attaining "medium" and "high" levels of literacy class participation but not for those who only achieved "low" levels of participation. The greatest increase in the proportion of women who had heard of STIs was among women who attained "high" levels of literacy class participation (24.5 percentage points).

The proportion of women who had heard of HIV/AIDS significantly increased from Year 1 to Year 3 for women in both the experimental group and the control group.[39] Differences from Year 1 to Year 3 were statistically significant[40] for the women attaining "medium" and "high" levels of literacy class participation but not for those who only achieved "low" levels of participation. The greatest increase in the proportion of women who had heard of HIV/AIDS was among women who attained "high" levels of literacy class participation (23.0 percentage points).

Over the three-year period, the proportion of women in either the control group or the experimental group who knew about ways to prevent STIs did not change significantly.[41] Additionally, no significant increase occurred among women in the control group regarding their knowledge of preventing HIV/AIDS. However, the proportion of women in the experimental group who knew how to prevent HIV/AIDS increased significantly from Year 1 to Year 3.[42]

In Year 1, few respondents knew how one might prevent STIs or HIV/AIDS. The most frequently occurring "correct" responses to both questions were "Have sex with only one partner;" "Abstain from sex;" "Use a condom;" "Avoid sex with prostitutes;" and "Be cautious about receiving blood transfusions." Figures 19 and 20 show changes in respondents' knowledge of how to prevent STIs and HIV/AIDS by level of literacy class participation.

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[37] For the Control Group McNemar's $x^2=(2, \underline{N}=194)$, $\underline{p}=1.000$, for the Experimental Group, McNemar's $x^2=(2, \underline{N}=773)$, $\underline{p}=.000$.

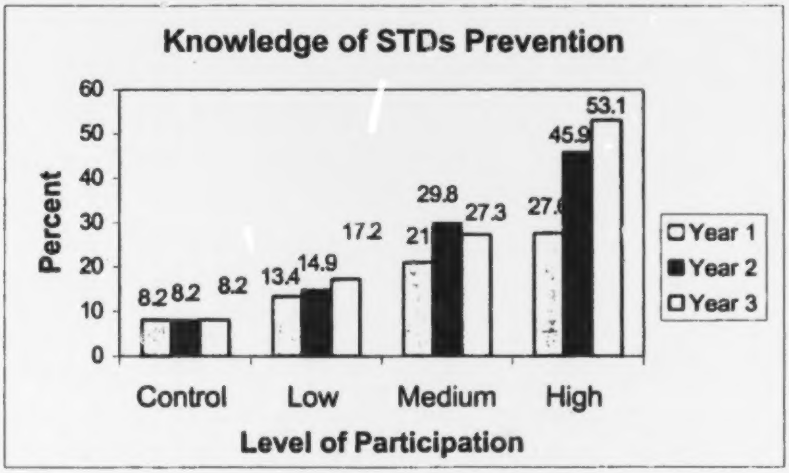
[38] For the Control Group McNemar's $x^2=(2, \underline{N}=194)$, $\underline{p}=.020$, for "Low" level McNemar's $x^2=(2, \underline{N}=262)$, $\underline{p}=.160$; for "Medium" level McNemar's $x^2=(2, \underline{N}=315)$, $\underline{p}=.000$; for "High" level McNemar's $x^2=(2, \underline{N}=196)$, $\underline{p}=.000$.

[39] For the Control Group McNemar's $x^2=(2, \underline{N}=194)$, $\underline{p}=.020$, for the Experimental Group, McNemar's $x^2=(2, \underline{N}=773)$, $\underline{p}=.000$.

[40] For the Control Group McNemar's $x^2=(2, \underline{N}=194)$, $\underline{p}=1.000$, for "Low" level McNemar's $x^2=(2, \underline{N}=262)$, $\underline{p}=.105$; for "Medium" level McNemar's $x^2=(2, \underline{N}=315)$, $\underline{p}=.006$; for "High" level McNemar's $x^2=(2, \underline{N}=196)$, $\underline{p}=.000$.

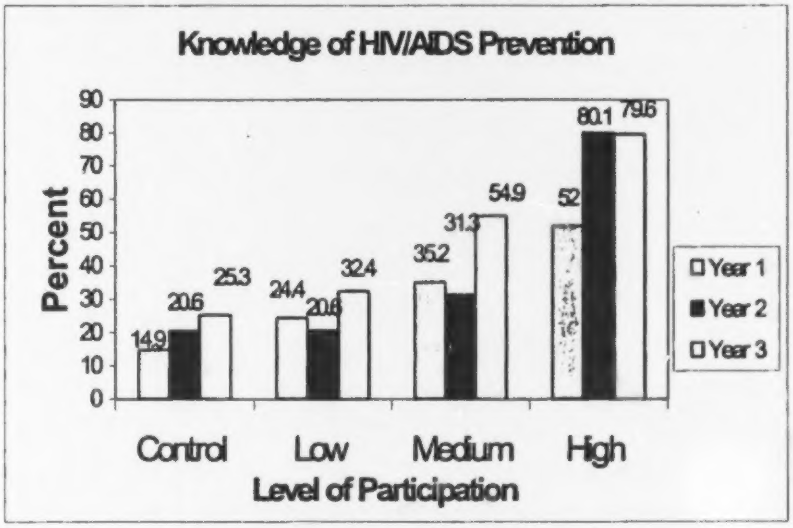
[41] For change in knowledge of preventing STIs for the Control Group, McNemar's $x^2=(2, \underline{N}=194)$, $\underline{p}=1.000$; for the Experimental Group, McNemar's $x^2=(2, \underline{N}=773)$, $\underline{p}=.232$.

[42] For change in knowledge of preventing HIV/AIDS for the Control Group, McNemar's $x^2=(2, \underline{N}=194)$, $\underline{p}=.608$; for the Experimental Group, McNemar's $x^2=(2, \underline{N}=773)$, $\underline{p}=.006$.



Total n=967 (Control n=194, "Low" n=262, "Medium" n=315, "High" n=196)

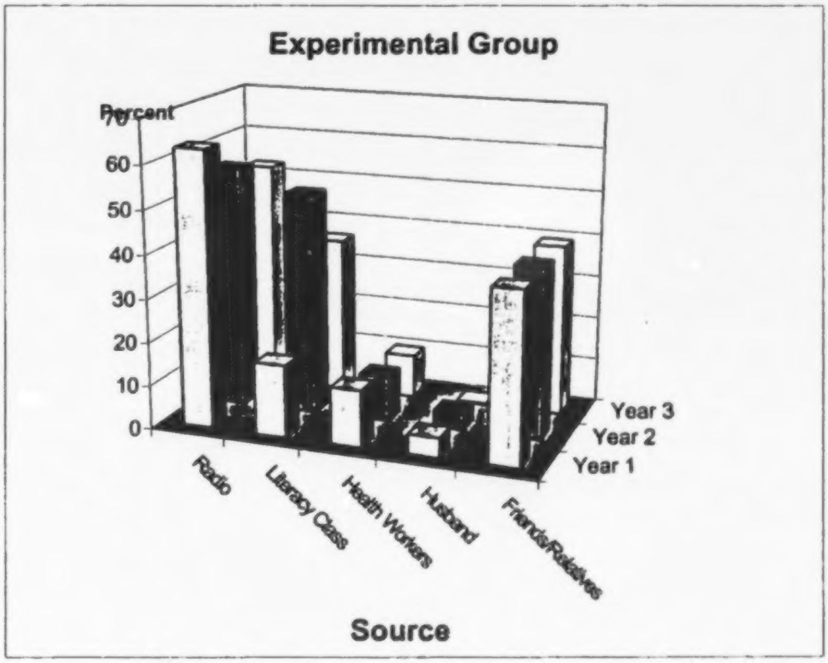
Figure 19: Percentage of Women Who Could Cite Methods of Preventing STIs by Level of Literacy Class Participation



Total n=967 (Control n=194, "Low" n=262, "Medium" n=315, "High" n=196)

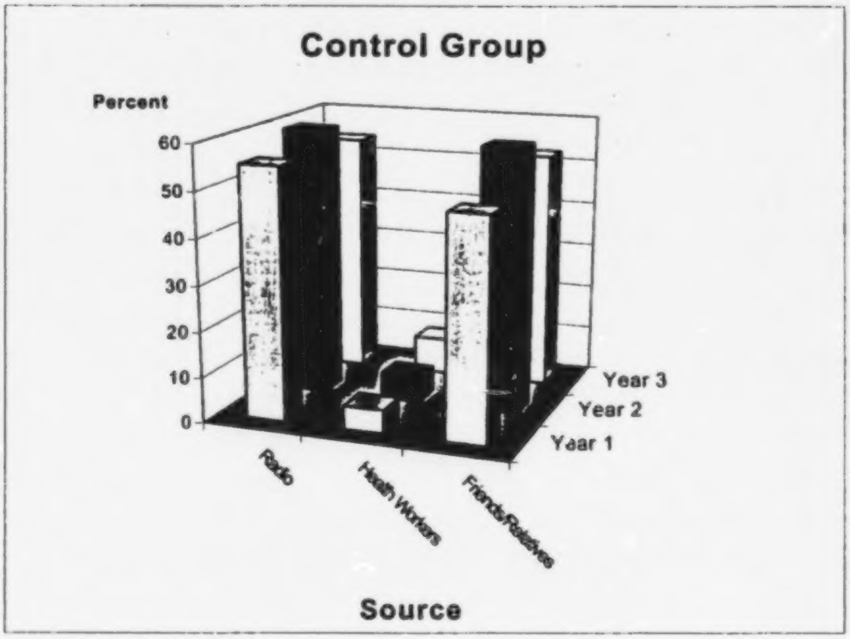
Figure 20: Percentage of Women Who Could Cite Methods of Preventing HIV/AIDS by Level of Literacy Class Participation

These data indicate that the literacy classes have been effective in conveying information about HIV/AIDS. The differences between the increases in knowledge concerning HIV/AIDS prevention for the experimental in comparison to the control group suggest that the classes have contributed to the increases in knowledge, over and above that provided through government and non-government sponsored health programs or disseminated through radio broadcasts. While it is not possible to separate the relative contributions of each source of information, respondents did provide an indication of where they learned about these subjects. Respondents were asked where they had learned about HIV/AIDS. The most frequent responses, depicted in Figures 21 and 22, included radio, literacy classes (for women in the experimental group), health workers, husband and friends, and relatives. A few women also mentioned books and pamphlets, training workshops, and school teachers.



Year 1 n=392, Year 2 n=491, Year 3 n=495

Figure 21: Experimental Group Where Women Heard About HIV/AIDS



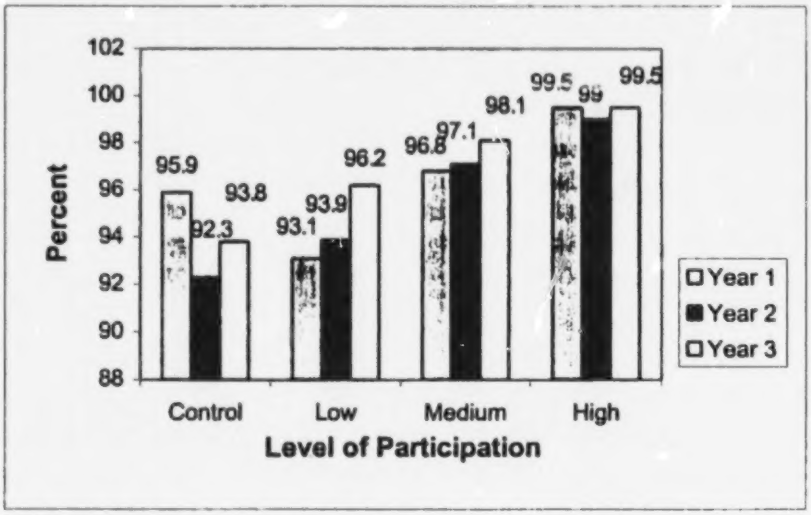
Year 1 n=58, Year 2 n=69, Year 3 n=74

Figure 22: Control Group Where Women Heard About HIV/AIDS

In the control group, about 55.2%, 59.4% and 54.1% of the women who had heard of HIV/AIDS said they had learned about it from the radio in Years 1, 2 and 3, respectively. It is interesting to note that in Year 1, when the literacy classes were just beginning, 16.6% of the women in the experimental group stated that they had learned about HIV/AIDS in their literacy classes. This further confirms that some of the women in this group had previously taken literacy classes, even though HEAL and BPEP basic-literacy programs are intended for women who have never taken prior literacy classes. About 50.9% of the women in the experimental group in Year 2, and 36.2% in Year 3 credited their literacy classes with providing them with information about HIV/AIDS. About 63.3%, 55.6% and 52.7% of the women in the experimental group who had heard of HIV/AIDS mentioned the radio as a source of information in years one, two and three, respectively. These figures illustrate the importance of continued sustained message delivery. Once the literacy classes had finished in Year 2, their main source of information was the radio.

5.3.7 Importance of Immunization

A high proportion of women in both the experimental and the control group believed immunization of their children to be important when the study began (Year 1). The proportion of women in the control group who said that they thought immunizations were important decreased slightly during the period. However, among women in the experimental group, the proportion who thought it was important increased in all groups (see Figure 23). Because these figures were high to begin with, no statistically significant differences were found for either the experimental or the control group[43] or for any of the levels of literacy class participation.[44]



Total n=967 (Control n=194, "Low" n=262, "Medium" n=315, "High" n=196)

Figure 23: Proportion of Women Who Said Immunization Was Important

5.3.8 Summary of Health Knowledge and Practice

To measure women's overall health knowledge over the three years, a 9-point composite measure was created. Multivariate Linear Regression Analysis was carried out to determine the relationship between this composite measure and other factors, including: 1) participation in previous literacy classes, 2) the cumulative amount of literacy class exposure during the three-year period based on the literacy class participation ratio, 3) performance on the Year 3 literacy test, 4) language spoken at home, 5) SES, and 6) age.

Findings indicated that of these six variables, only two factors–the cumulative amount of literacy class participation (the literacy class participation ratio) and literacy test scores–were significantly correlated with increases in the health knowledge composite. Even though the relationship between these two variables and increased health knowledge was significant, their contribution toward explaining variation in changes in health knowledge was relatively small. The level of literacy class participation, together with women's performance on the Year 3 literacy test scores, explained about 2.8% of the variation in changes in the health composite score. About 2.3% of the variance proportion was explained by level of literacy class participation and 0.5% by performance on the literacy test. For each unit increase in the literacy class participation ratio, we can expect an increase of 0.49 points in the health composite score (on a 9-point scale) over a three-year period. For each unit increase in literacy score, we can expect an increase of .01 points in the health composite score.

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[43] For the Control Group, McNemar's x^2=(2, $\underline{N}$=194), $\underline{p}$=.481; for the Experimental Group, McNemar's x^2=(2, $\underline{N}$=773), $\underline{p}$=.073.

[44] For "Low" level McNemar's x^2=(2, $\underline{N}$=262), $\underline{p}$ =.152; for "Medium" level McNemar's x^2=(2, $\underline{N}$ =315), $\underline{p}$ =.388; for "High" level McNemar's x^2=(2, $\underline{N}$ =196), $\underline{p}$=1.000.

These findings suggest that the participation in the literacy classes is contributing positively toward increased health knowledge. However, it appears that numerous programs, radio broadcasts and other interventions may also be helping to improve health knowledge among women in the sample. The existence of these programs makes it extremely difficult to isolate the exact contribution of the HEAL and BPEP toward these improvements.

Table 15 summarizes the analysis of change in individual variables over the period. The difficulty of isolating program contributions is illustrated by the fact that significant increases occurred in both the experimental group and the control group in the proportion of women who were knowledgeable about sources of vitamin A, as well as about ways of delaying pregnancy, and HIV/AIDS. Additionally, significant increases occurred in the proportion of mothers of children 6-59 months in both the experimental and the control group who provided vitamin A supplements to their children.

Table 15: Summary of Changes in Health Knowledge and Practice Measures

	Year 1 to Year 3 Significant Increase?	
Variable	**Experimental Group**	**Control Group**
Knowledge:		
Knowledge of sources of vitamin A	Yes***	Yes***
Heard of ways of delaying pregnancy	Yes***	Yes*
Heard of family planning	Yes***	No
Knowledge of reasons for family planning	Yes***	No
Heard of STIs	Yes***	No
Knowledge of ways of preventing STIs	No	No
Heard of HIV/AIDS	Yes***	Yes***
Knowledge of way of preventing HIV/AIDS	Yes***	No
Knowledge of importance of immunization	No	No
Practice:		
Use family planning method	No	No
Give vitamin A supplements to child (age 6-59 months)	Yes***	Yes***

*** Significant at the .001 level of significance, using McNemar's test of Correlated Proportions.

* Significant at the .05 level of significance, using McNemar's test of Correlated Proportions.

Nevertheless, significant increases occurred among women in the experimental group that were not evident among women in the control group, including increases in the proportion who had heard of family planning, knew reasons for using family planning, had heard of STIs and knew ways of preventing HIV/AIDS. This is a clear indication that the program did have an impact on women's health knowledge over and above the information generally available in the community.

5.4 Participation in Income-Earning Activities

5.4.1 Women's Role in Nepal's Economy

Women's contributions to Nepal's economy have been significantly undervalued by Nepali society, despite women's substantial input in the formal and informal labor markets. *The Status of Women in Nepal* (*SOWN*) completed in 1981 found that women contributed to more than half (53%) of household income in rural areas. Another study provided substantial field evidence that over 51% of the labor required on farms came from women's labor contributions (Acharya and Bennett, 1981). Prior studies have reported that about 58% of the rural women were involved in farm activities (Shtrii Shakti, 1995). Farm activities included traditional farming (grain planting), kitchen gardening, animal husbandry, poultry raising and fish farming (Central Bureau of Statistics, 1995a, 1996a). Yet, the 1991 census reported that rural men (69.8%) were more economically active than rural women (48.1%). This clearly indicated that much of women's labor activities still goes unreported and unrecognized (Acharya, 1997).

The workload of women in rural areas and women's involvement in the manufacturing industry has increased since the time of the *SOWN* study (Shtrii Shakti, 1995). About 23% of Nepal's labor force in manufacturing is female, a figure that increased six-fold in the 1980s. Monopolies in the manufacturing sector have also increased, which together with globalization, have spawned the trend of sub-contracting, forcing women workers to work for lower wages. The increase in control that monopolies have over the crafts market has, in turn, threatened the viability of home-based crafts industries operated by independent women entrepreneurs. The situation has been aggravated by the sudden upsurge in consumerism and the demand for imported goods.

These new economic trends have disproportionately affected women and economic security is rapidly becoming a critical issue for women, particularly in the face of their low levels of literacy. Lack of education, mobility and membership in labor unions often means that women employees are the first to be retrenched. Illiteracy, thus, contributes to women's difficulties in competing in the larger labor force. Women are easily displaced and unable to find attractive alternatives because of their lack of formal education. In this way, a number of important trends in employment and labor patterns have resulted in low level of empowerment for women workers in formal, organized units (Acharya, 1997).

5.4.2 Literacy and Women's Income

In 1997 USAID/Nepal asserted that women who can read, write and earn money can create more social change through organized and collective actions (Dhakal and Sheikh, 1997). Those associated with these programs contend that women's literacy programs fill a vital need to provide women with skills helpful in generating income. Access to cash income increases women's sphere of influence in family decision making concerning household expenditures, and in making investments on behalf of their children. When women have control over purchases, they tend to invest more of their income on their children, their household needs, and their own health needs (Acharya, 1997). Furthermore, according to Acharya (1997, p. 48) "economic security, including the right to own property and have cash savings, enables women to negotiate household decisions. Shared household decision-making strengthens a family's capacity to improve the well-being of all its members. However, further research on the effects of women's participation in literacy programs on their earning potential and their ability to enter the local market economy in Nepal is still needed.

USAID and program personnel wished to determine whether the BPEP and HEAL program had an impact on women's participation in income-earning activities. Following 9 months of basic-literacy training and 6 months of post-literacy training, BPEP provides training that includes income-earning activities. Although HEAL does not specifically include income-earning activities as part of its training, women in the program are encouraged to participate in micro-enterprise development programs existing in the area.

5.4.3 Measures of Participation in Income-Earning Activities

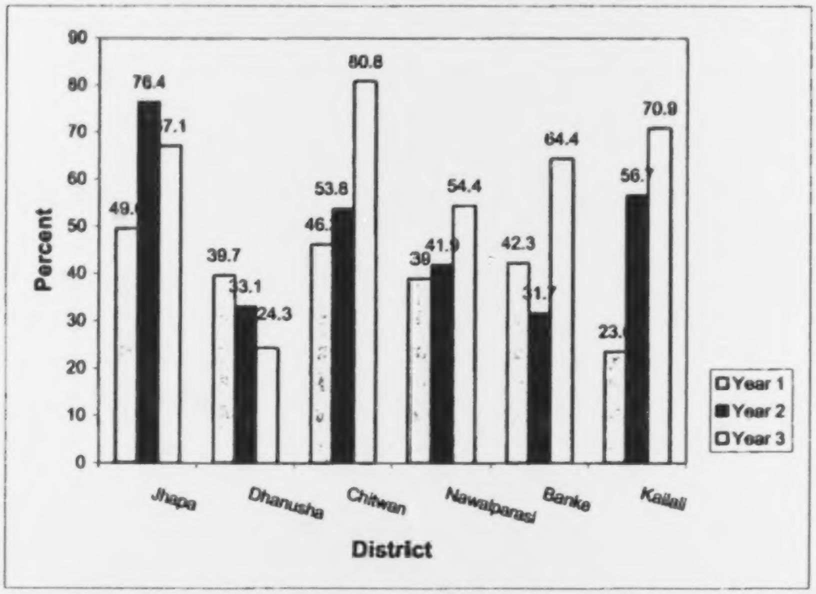
In this study, "income-earning activity participation" refers to any kind of money-earning activity in which women were engaged, either for themselves or for their families. This includes participation in income-generating activities, use of credit, use of agricultural or production techniques that result in increased productivity, or actions to increase the productivity of available local resources. Within this context, the study aimed to find out whether women who increase their literacy skills *seek* opportunities to participate in income-earning activities, and plan to *expand* activities that they have already initiated.

This section addressed the following research questions:

1. Did women's participation in income-earning activities significantly increase from Year 1 to Year 3?
2. To what extent did women's participation in the literacy classes contribute to increases in women's participation in income-earning activities during the three-year period?
3. To what extent did women's participation in the literacy classes contribute to increases in women's participation in savings and credit during the three-year period?
4. To what extent do other factors, including age, district, level of literacy class participation, SES and language have an impact on changes in women's participation in income-earning activities over the three year period?

5.4.4 Participation in Income-Earning Activities by District

Each year women in the sample were asked to report whether they were involved in any kind of income-earning activities. The proportion of women who were participating in an income-earning activity increased significantly[45] for women in the experimental group (from 40.1% to 59.9%) and the control group (from 36.6% to 59.8%) during the period. This indicates that many women were participating in other economic programs offered by NGOs, banks, cooperatives and savings groups. Figures 24 and 25 depict women's participation in income-earning activities by district. In both the experimental group and the control group, the highest proportion of women involved in income activities in all three years was in the districts of Chitwan and Jhapa. Initially, the district with the lowest level of economic participation, both among the control group and women who were participating a HEAL or BPEP program, was Kailali District.



Total n=773 (Jhapa n=140, Dhanusha n =136, Total n=194 Chitwan n=130, Nawalparasi n =136, Banke n=104, Kailali n=127)

Figure 24: Experimental Group Participation in at Least One Income-Earning Activity by District

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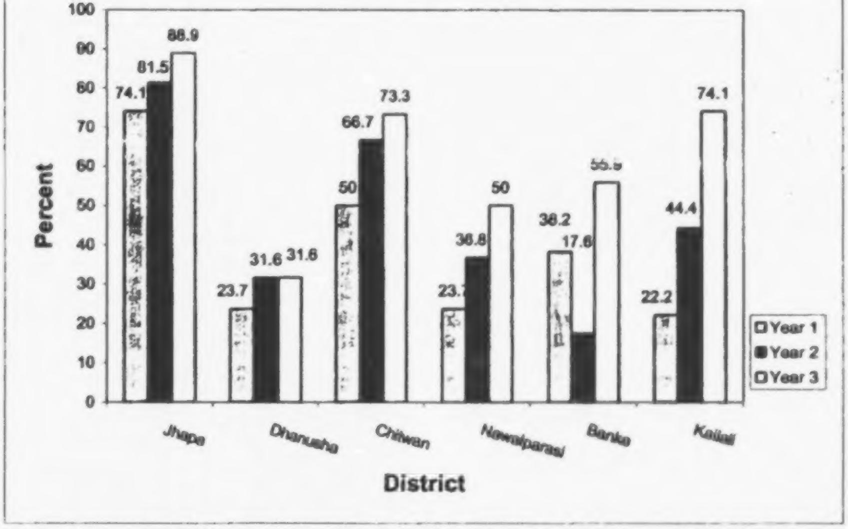
[45] For the Control Group McNemar's x^2=(2, N=194), p =.000, for the Experimental Group, McNemar's x^2=(2, N=773), p =.000.



Total n=188 (Jhapa n=26, Dhanusha n=38, Chitwan n= 30, Nawalparasi n =38, Banke n=34, Kailali n=27

Figure 25: Control Group Participation in at Least One Income-Earning Activity by District

However, this district showed the greatest *increases* in the proportion of women participating in income-earning activities over the three years (47.3 percentage points in the experimental group and 41.9 percentage points in the control group). Kailali District is also the district that showed the greatest improvement in literacy test scores during the period (see Table 11 in Section 5.2.3). Increases in income-earning activities were also high in Chitwan District. The district showing the least improvement in the proportion of women participating in income-earning activities was Dhanusha, where women's involvement in income-earning activities remained the same in the control group and decreased by 15.4 percentage points in the experimental group.

In the experimental group, participation in income-earning activities significantly increased[46] from Year 1 to Year 3 in all districts. Increases were also observed in all districts in the control group, but the number of cases in each district was too small to determine whether differences were statistically significant.

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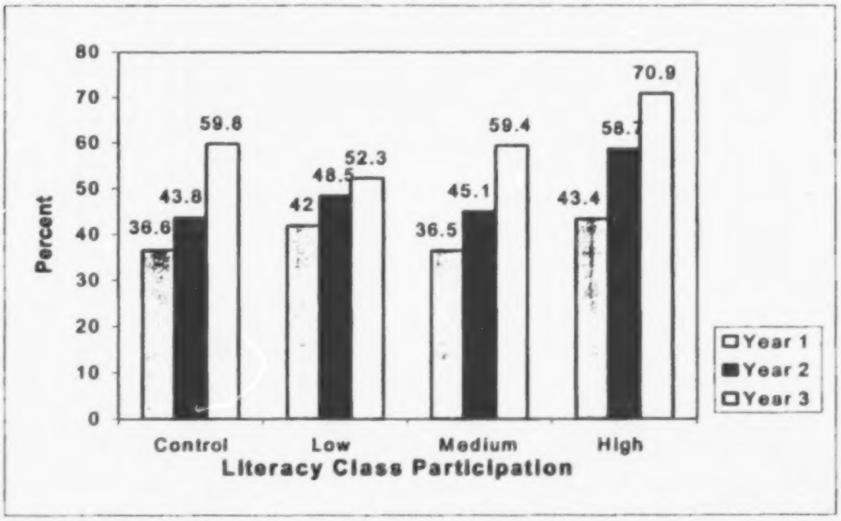
[46] For Jhapa McNemar's x^2=(2, N=140), p =.002, for Dhanusha McNemar's x^2=(2, N=136), p =.002, for Chitwan McNemar's x^2=(2, N=130), p =.000, for Nawalparasi McNemar's x^2=(2, N=136), p =.006, for Banke McNemar's x^2=(2, N=104), p =.002, for Kailali McNemar's x^2=(2, N=127), p =.000

5.4.5 Participation in Literacy Classes and Participation in Income-Earning Activities

Figure 26 graphically depicts the proportion of women participating in at least one income-earning activity by their level of literacy class participation.



Total n=967 (Control n=194, "Low" n=262, "Medium" n=315, "High" n=196)

Figure 26: Percentage of Women Participating in at Least One Income-Earning Activity by Level of Literacy Class Participation

This figure shows a steady increase in respondents' participation in income-earning activities across groups over the three-year period. Differences from Year 1 to Year 3 were statistically significant[47] for the women at all levels of literacy class participation. The greatest increase in the proportion of women who were participating in an income-earning activity was among women who attained "high" levels of literacy class participation (27.5 percentage points) (those who completed a basic-literacy course plus another basic-literacy or post-literacy course).

The smallest increase (10.3 percentage points) was among women who attained "low" levels of literacy class participation (those who completed less than half of a basic-literacy course over the three years). The proportion of women in the control group who were participating in an income-earning activity increased by 23.2 percentage points

Table 16 provides more detailed information about the income-earning activities in which women were participating.

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[47] For "Low" level McNemar's x^2=(2, N=262), p =.009; for "Medium" level McNemar's x^2=(2, N =315), p =.000; for "High" level McNemar's x^2=(2, N =196), p=.000.

Table 16: Income-Earning Activity Details[a]

	Experimental Group[b]					Control Group[c]				
	Yr. 1 %	Yr. 2 %	Yr. 3 %	Yr.1-Yr. 2 % Point Chng.	Yr.1-Yr. 3 % Point Chng.	Yr. 1 %	Yr. 2 %	Yr. 3 %	Yr.1-Yr. 2 % Point Chng.	Yr.1-Yr. 3 % Point Chng.
Who Started?[d]										
Self	57.3	59.7	73.9	2.4	16.6	53.4	69.6	76.0	16.2	22.6
Group	3.2	1.3	0.5	-1.9	-2.7	1.7	1.4	0.0	-.03	-1.7
Husband/ family	39.5	39.0	25.6	-0.5	-13.9	44.8	29.0	24.0	-15.8	-20.8
Received Training to Start[e]	5.9	5.1	6.1	-0.8	0.2	3.4	4.3	2.0	0.9	-1.4
Type of Activity										
Agriculture	63.5	65.1	70.5	1.6	7.0	48.6	52.3	68.7	3.7	20.1
Cottage Industry	3.5	3.9	4.3	0.4	0.8	6.9	10.5	7.0	3.6	0.1
Small bus.	11.6	11.5	9.5	-0.1	-2.1	25.0	17.4	11.3	-7.6	-13.7
Outside employ.	2.9	1.8	0.9	-1.1	-2.0	0.0	0.0	0.0	0.0	0.0
Daily wage	17.4	17.7	14.9	0.3	-2.5	19.4	19.8	13.0	0.4	-6.4
Interest/ Savings	1.0	0.0	0.0	-1.0	-1.0	0.0	0.0	0.0	0.0	0.0
Thinking of Expanding[f]	73.9	67.9	68.1	-6.0	-5.8	69.0	68.1	63.0	-0.9	-6.0
Expanded Since Last Year										
No	-	70.0	70.6	-	-	-	85.5	70.0	-	-
Yes	-	16.0	17.7	-	-	-	14.5	16.0	-	-
Just Started (< 1 Yr.)	-	14.0	11.6	-	-	-	0.0	14.0	-	-

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[a] This information pertains to the first activity listed, when more than one activity was listed.

[b] Experimental Group Year 1 n=253, Year 2 n=315, Year 3 n=395.

[c] Control Group Year 1 n=58, Year 2 n=69, Year 3 n=100.

[d] Significance tests were not carried out for variables having more than two possible responses.

[e] Using McNemar's Test of Correlated Proportions, the difference between the proportion of women receiving training in Year 1 and the proportion for Year 2 or Year 3 was not significant at *alpha* =.05 for either the experimental group or the control group.

[f] Using McNemar's Test of Correlated Proportions, the difference between the proportion of women who were thinking of expanding their income-earning activity in Year 1 and the proportion for Year 2 or Year 3 was not significant at *alpha* =.05 for either the experimental group or the control group.

It is likely that some of the women in both the experimental and the control groups were participating in income-earning activities sponsored by other organizations, which may account for the increases during the period.[48]

Most of the women in both the experimental group and the control group who were participating in an income-earning activity indicated that they had started the activity themselves. The proportion of women in both groups who said that they started the activity, rather than their husband/family members or a group, increased during the period from 57.3% to 73.9% for the experimental group and from 53.4% to 76% for the control group.

Few of the women participating in income-earning activities reported receiving training to start them (about 6% or less), and the proportion did not change significantly[49] during the period for either the experimental group or the control group.

In both the experimental group and the control group, agriculture was the most frequently mentioned type of income-earning activity. Of the women who were participating in an income-earning activity, the proportion who were involved in an agriculture-related activity increased during the three years from 63.5% in Year 1 to 70.5% in the experimental group and from 48.6% to 68.7% in the control group.

A high percentage of the women in both groups said that they were thinking of expanding their activities in Year 1 (73.9% in the experimental group and 69% in the control group). However, a much lower proportion of the women in either group reported that they actually expanded those activities (16% in Year 2 and 17.7% in Year 3 in the experimental group and 14.5% and 16% in Year 2 and Year 3, respectively in the control group).

Table 17 shows the average duration of the income-earning activities for the experimental and the control group. The average duration across the three years was 74.5 days for the experimental group and 83 days for the control group.

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[48] As noted earlier, women in the control group who joined a literacy class during the three years that the GWE-PRA study was underway were excluded from the analysis. However, no information was collected concerning respondents' participation in other types of activities.

[49] For the Control Group McNemar's x^2=(2, N=49), p =1.000, for the Experimental Group, McNemar's x^2=(2, N=159), p =1.000.

Table 17: Mean Duration (in Days) of Income-Earning Activities

Experimental Group[a]					Control Group[b]				
Yr. 1	Yr. 2	Yr. 3	Yr.1-Yr. 2 Chng.	Yr.1-Yr. 3 Chng.	Yr. 1	Yr. 2	Yr. 3	Yr.1-Yr. 2 Chng.	Yr.1-Yr. 3 Chng.
70.6	72.8	80.0	2.2	9.4	80.1	84.6	84.3	4.5	4.2

[a] Experimental Group Year 1 n=307, Year 2 n=370, Year 3 n=453
[b] Control Group Year 1 n=72, Year 2 n=82, Year 3 n=105

5.4.6 Literacy Scores and Participation in Income-Earning Activities

In addition to women's levels of literacy class participation, we examined the relationship between women's performance on a literacy test and their participation in income-earning activities. Table 18 delineates mean literacy scores and standard deviations by whether or not women were participating in income-earning activities for each of the three years. As shown, the literacy scores in Year 1 were similar for both groups. However, by Year 2 and Year 3, the gap had widened. A t-test analysis revealed that the differences in mean literacy scores were not significant in years one and two, but by Year 3, women participating in economic-earning activities had a significantly[50] higher mean literacy score than women who were not participating.

Table 18: Mean Literacy Score and Standard Deviation by Participation in at Least One Income-Earning Activity

	Participating in at Least One Income earning Activities		Not Participating in an Income-Earning Activity	
	Mean Lit. Score	Std. Deviation	Mean Lit. Score	Std. Deviation
Year 1 (n=967)	14.98	14.44	14.81	14.67
Year 2 (n=967)	18.19	15.20	16.56	15.03
Year 3 (n=967)	18.43	15.40	14.47	13.94

It is likely that a combination of factors, including literacy class participation, increased confidence, knowledge and skills, as well as economic factors that are beyond the scope of this study, were responsible for the increase in the number of women participating in income-earning activities during the period. Additionally, self-selection may also have contributed to the increase. The women who signed up for and completed more than one literacy class may possess many of the same qualities (e.g., high motivation, tenacity and an orientation toward the future) needed to initiate income-earning activities. Similarly, women who dropped out early in the program and did not re-enroll may lack the qualities, resources or support needed to take on such activities. However, it appears from these data that both the amount of time spent in the classroom and literacy skills play a significant role in women's involvement in income-earning activities.

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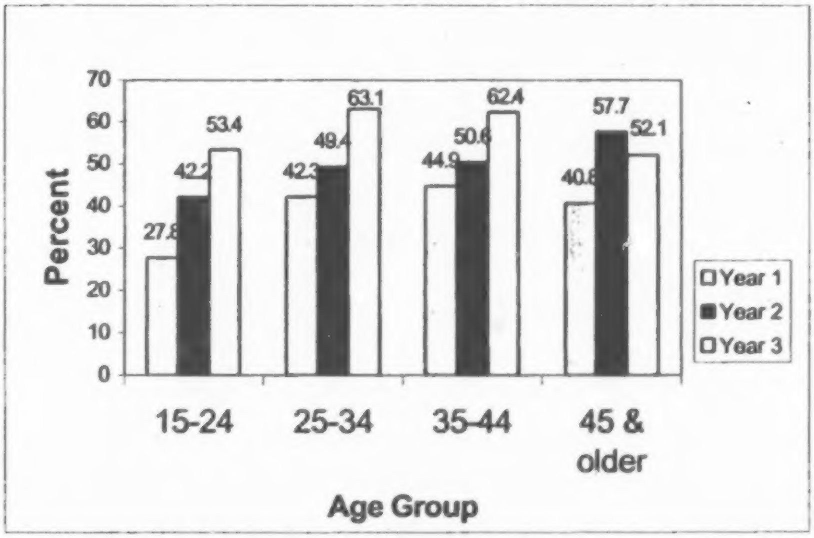
[50] T-test results for Year 1 were: t (2, 965) =-1.81, p=.857; for Year 2 t (2, 964) -1.67, p=.094, for Year 3 t (2, 964) - 4.07, p=. 000.

5.4.7 Age and Participation in Income-Earning Activities

Figure 27 shows the proportion of each age group cohort who were involved in income-earning activities each year over three years.[51] The highest percentage of women involved in income-earning activities during the period was among women who were between the ages of 25 and 44 in Year 1.[52] However, the age group showing the greatest *increase* (25.6 percentage points) in the proportion of women participating in income-earning activities was the 15-24 age group. This suggests that a strategy that places strong emphasis on programs involving young women and adolescent girls should be considered.



Total n=966 (Age Group 15-24 n=223, Age Group 25-34 n=409, Age Group 35-44 n=263, Age Group 45 and older n=71)

Figure 27: Percentage Participating in Income-Earning Activities by Age Group

5.4.8 Language and Participation in Income-Earning Activities

Language also appears to be a factor affecting women's participation in income-earning activities. Figure 28 shows the percentage of Nepali and non-Nepali speakers who participated in income-earning activities over the three years.

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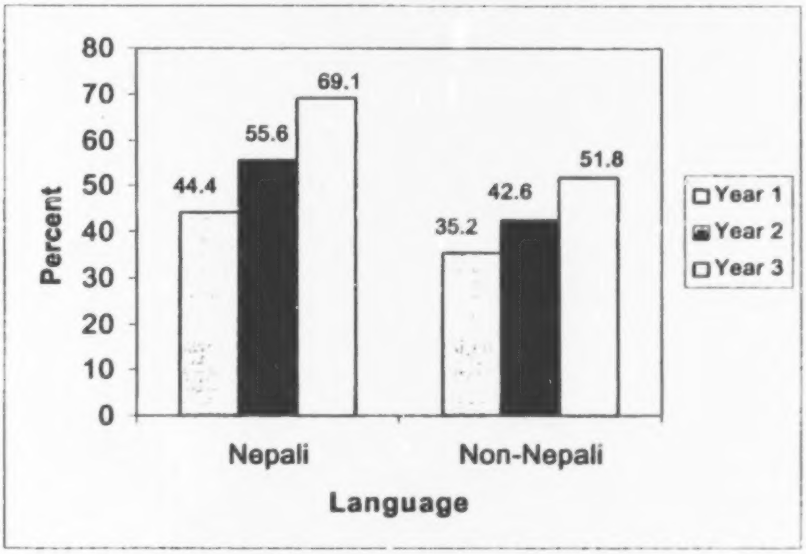
[51] Percentages are not presented by experimental and control group because the number of cases in some of the categories was too small to validly calculate percentages. For example, only six women in the control group were in the 15-24 age group.

[52] These figures reflect the women's ages at baseline (Year 1).



n=967 (Nepali=450, Non-Nepali=517)

Figure 28: Percentage of Women Who Participated in at Least One Income-Earning Activity by Language Spoken at Home

As illustrated, those who spoke Nepali at home were more likely to be involved in income-earning activities than those who spoke another language at home. The difference between the proportion of Nepali and non-Nepali speakers in the sample who were engaged in income-earning activities was statistically significant[53] in all three years. Additionally, the *increase* in women's participation in income-earning activities during the period was greatest among Nepali speakers.

Some of the women were participating in more than one income-earning activity. Increases in the proportion of women who were participating in two or more activities from Year 1 to Year 3 were statistically significant[54] for both the experimental and the control group. Figure 29 depicts the proportion of women each year who were participating in *two* activities by their level of literacy class participation. Women who attained a "high" level of literacy participation had the greatest proportion of women participating in a second income-earning activity. This was also the group with the largest *increase* in the proportion of women participating in a second activity (20.0 percentage points).

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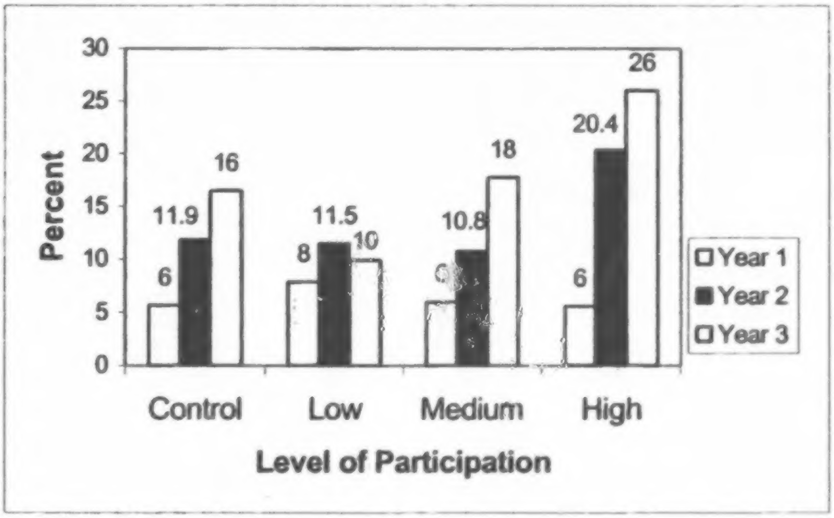
[53] The results of a comparison of the proportion of Nepali speakers who participated in income-earning activities with the proportion of non-Nepali speakers were compared using Chi Square. For Year 1 x^2 (2, $\underline{N}$=967)=8.60, $\underline{p}$=.003; for Year 2 x^2 (2, $\underline{N}$=967) =16.28, $\underline{p}$=.000 and for Year 3 x^2 (2, $\underline{N}$ =967)=29.88, $\underline{p}$=.000.

[54] For the Control Group McNemar's x^2=(2, $\underline{N}$=194), $\underline{p}$ =.000, for the Experimental Group, McNemar's x^2=(2, $\underline{N}$=773), $\underline{p}$ =.000.

Increases in the proportion of women who were participating in more than two income-earning activity from Year 1 to Year 3 were statistically significant[55] for the women at the "medium" and "high" levels of literacy class participation but not for those who attained "low" levels of participation.



Total n=967 (Control n=194, "Low" n=262, "Medium" n=315, "High" n=196)

Figure 29: Percentage of Women Participating in at Least Two Income-Earning Activities by Level of Literacy Class Participation

5.4.9 Access to Credit

Access to credit can have an important impact on women's ability to start or expand an income-earning activity. The proportion of women in the experimental group who took out individual loans was significantly higher in Year 3 (30.1%) than in Year 1 (16.7%). However, the increase in the proportion of women in the control group who received loans was not significant, with 14.4% receiving loans in Year 1 compared with 17.5% in Year 3.

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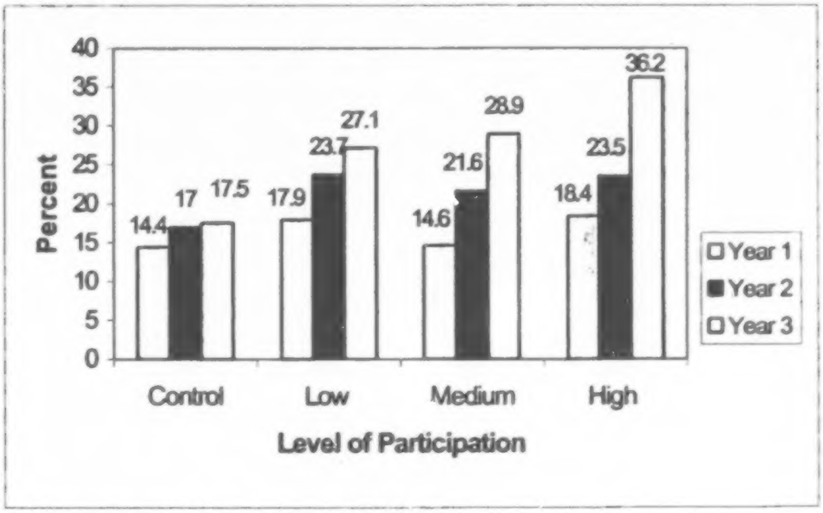
[55] For "Low" level McNemar's x^2=(2, N=262), p =.098; for "Medium" level McNemar's x^2=(2, N =315), p =.000; for "High" level McNemar's x^2=(2, N =196), p=.000.

Figure 30 shows that women with "high" levels of participation in the literacy classes were most likely to take out an individual loan during most of the period. Similarly, increases in the proportion of women taking loans over the period were greatest in this group. However, of the women who received loans, only about 50.9%, 45.0% and 39.7% in years one, two and three, respectively reported that they used the money to start or expand an income-earning activity. Other uses for the loans included buying land or houses, paying for children's weddings, agricultural input, such as fertilizers, tools, and seeds, daily household expenses, and medical expenses. About 3.2%, 4.8% and 2.6% of the women in years one, two and three, respectively, took loans to pay money lenders for previous loans.



Total n=967 (Control n=194, "Low" n=262, "Medium" n=315, "High" n=196)

Figure 30: Percentage of Women Receiving Loans by Level of Literacy Class Participation

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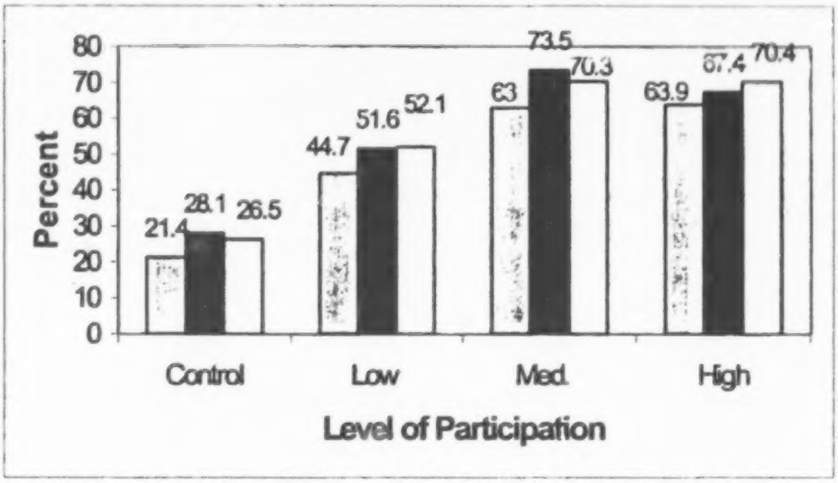
Figure 31 shows that of the women who received loans, those with "high" or "medium" levels of literacy were more inclined to use rural development banks or other banks, cooperatives and NGO savings groups, instead of friends and villagers, relatives or money lenders than those with "low" levels or those in the control group.



Year 1 Total n=157 (Control n=28, "Low" n=47, "Medium" n=46, "High" n=36)
Year 2 Total n=209 (Control n=33, "Low" n=62, "Medium" n=68, "High" n=46)
Year 3 Total n=267 (Control n=34, "Low" n=71, "Medium" n=91, "High" n=71)

Figure 31: Percentage of Those Receiving Loans Whose Money Came from Rural Development Banks, Other Banks, Cooperatives, or NGO Savings Groups by Level of Class Participation

5.4.10 Savings

Increases from Year 1 to Year 3 in the proportion of women who had savings were significant[56] for women attaining "medium" and "high" levels of literacy class participation but not for women who attained only a "low" level.

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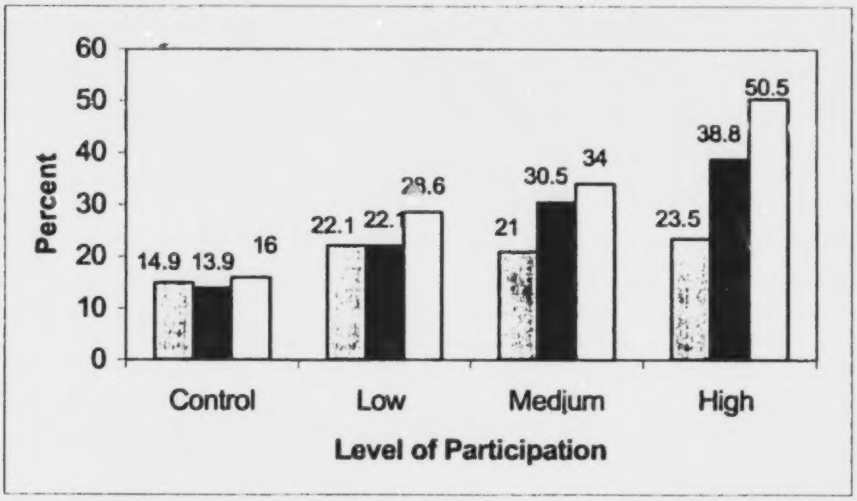
[56] For the Control Group McNemar's x^2=(2, N=194), p =.883, for the Experimental Group, McNemar's x^2=(2, N=773), p =.068.

Figure 32 shows the proportion of women who had savings each year over the three years by level of literacy class participation.



Total n=967 (Control n=194, "Low" n=262, "Medium" n=315, "High" n=196)

Figure 32: Percentage of Women with Savings by Level of Literacy Class Participation

5.4.11 Summary of Participation in Income-Earning Activities

The number of women who participated in income-earning activities increased significantly from Year 1 to Year 3 in both the experimental group and the control group. Additionally, significant increases occurred across all levels of literacy class participation. The highest increase occurred among women with "high" levels of literacy class participation (i.e., those who completed not only the HEAL or BPEP basic-literacy program but also participated in additional basic or post-literacy classes offered by these programs in years two and three). Increases in income-earning activities among women in the experimental group who had "low" levels of literacy class participation (those who completed less than half of a basic-literacy program during the three-year period) were not significant.

Initially, Kailali District had the lowest level of participation in income-earning activities in both the control group and the experimental group. Over the three years, this district showed the greatest increases in the proportion of women participating in income-earning activities (47.3 percentage points in the experimental group and 41.9 percentage points in the control group). Chitwan District also had higher increases in the proportion of women participating in income-earning activities over the period than other districts.

The district showing the least improvement in the proportion of women participating in income-earning activities was Dhanusha District, where women's involvement in income-earning activities remained the same in the control group and decreased by 15.4 percentage points in the experimental group.

The most frequently mentioned income-earning activity in which women were involved was agriculture. About half to three-quarters of the women who were participating in an income-earning activity said that they had started the activity themselves, and 25-40% indicated that the activity had been started by their husband or other family members. Few women (about 6%) received training in how to carry out their income-earning activities. While most of the women aspired to expand their activities (70-85%), a much smaller proportion (about 17% or less) actually did so during the period.

Other factors, including age and language spoken at home, were also examined in relation to women's participation in income-earning activities. In general, the women who were most actively involved in income-earning activities were those who had the highest levels of literacy class participation, were 25-44 years old, and spoke Nepali at home. The greatest *increases* in involvement in income-earning activities over the period were among women who were age 15 to 24, who spoke Nepali at home and who had "high" levels of literacy class participation.

The proportion of women in the experimental group who took out individual loans was significantly higher in Year 3 (30.1%) than in Year 1 (16.7%). However, the increase in the proportion of women in the control group who received loans was not significant, with 14.4% percent receiving loans in Year 1 compared with 17.5% in Year 3. When women's level of literacy class participation was taken into account, increases in the proportion of women taking loans were significant for women attaining "medium" and "high" levels of literacy class participation but not for women who attained a "low" level. However, of the women who received loans, only about 50.9%, 45.0% and 39.7% in years one, two and three, respectively reported that they used the money to start or expand an income-earning activity. Other uses for the loans included buying land or houses, paying for children's weddings, agricultural input such as fertilizers, tools, and seeds, daily household expenses, and medical expenses. About 3.2%, 4.8% and 2.6% of the women in years one, two and three, respectively, took loans to pay money lenders for previous loans.

The proportion of women who had savings did not increase significantly from Year 1 to Year 3 for either the experimental group or the control group.

From these findings we concluded that participation in the integrated literacy programs does have an impact on women's economic participation. However, as noted earlier, the focus on skills leading to economic empowerment is minimal in the HEAL and BPEP programs. While the increase in participation in income-earning activities may be related to the increased skills, knowledge and confidence gained by participating in the literacy classes, a much greater impact could be realized by either strengthening this portion of the respective programs or by channeling participants who have completed these programs into programs such as WEEL, which are specifically targeted to increasing women's economic empowerment.

5.5 Political Awareness and Participation

The political situation in Nepal is currently very unstable. During the last decade, the political structure has undergone numerous transformations, sometimes resulting from violent confrontations. Participation in the political process in the face of these conditions is not an attractive prospect for most Nepali women. In addition, politics has traditionally been a male-dominated arena in Nepal. Despite government efforts to promote women's political participation, the proportion of women elected to local government offices and to parliament actually decreased from the 1980s to 1992 (Acharya, 1997). Furthermore, women largely remain absent from any policy decisions in the executive, judiciary and legislative branches (Shtrii Shakti, 1995).

Since 1990, the Nepali government has played a role in increasing opportunities for women to enter local and national politics. The new Constitution adopted in 1990 states that at least 5% of the nominees from all parties in parliamentary elections must be women. In 1991, the Village Development Committee (VDC) Act was passed by Parliament, making it compulsory to elect at least one female ward member from each of the nine wards of one VDC. Each of Nepal's three constitutions (1951, 1980, and 1990) also claimed to have protected women from gender discrimination, as they have laws against discrimination "based on sex." But as Shtrii Shakti pointed out, "...the general laws themselves are based on Hindu patriarchal ideology and still reflect male domination" (1995, p. 85). Despite constitutional provisions for ensuring their participation, mainstreaming gender in development activities and preventing gender discrimination in the private and public domain, levels of political awareness and participation remain low, especially among rural women in Nepal.

In 1995, only 0.6% of the total number of village development committee (VDC) seats were filled by women (Shtrii Shakti, 1995). Surveys conducted in 1993 indicated that only 17.6% of women in rural households would even be interested in serving as representatives in the VDC, if elected. One reason for low levels of awareness and participation in political and legal affairs is the perception that women belong in the private sphere of Nepali society and not in the public sphere where legal affairs take place. When asked why they did not want to participate, 32.8% said they were not capable of performing the duties required of the position, and 29.7% gave illiteracy as the main reason for their hesitancy (Shtrii Shakti, 1995).

To raise rural women's awareness about their local surroundings and enable them to engage in self-empowerment activities, The Ministry of Local Development and the United Nation's Development Program (UNDP) together introduced programs such as the Local Governance Program (LGP) and Gender Mainstreaming (GM) in villages and districts across Nepal (UNDP, 2000).

These programs, which were initiated during the *Eighth Five Year Development Plan (1992-1997)*[57] in 1995, aim to support and promote women's participation in community building and governance at the grassroots level.

5.5.1 Women's Literacy, Legal Rights and Political Empowerment

Evidence in Nepal indicates that women are often unaware of their own political and legal rights related to areas such as divorce, discrimination, sexual and reproductive health, and rape (Upreti, 1991; Thapaliya, 1996; Acharya, 1997; Shtrii Shakti, 1995), as well as their rights to adoption (Subedi, 2002). A study conducted in Nepal in 1997 found that women who have learned to read and understand their legal rights are much more likely to initiate action for social change than those who are illiterate (Dhakal and Sheikh, 1997). Research by Robinson-Pant (1997) investigated women in the Dhanusha district in the Terai who had completed literacy courses and had received "tin trunk libraries" in their communities. Findings indicated that these women were "particularly keen to read women's law books to know more about their rights in society" (Robinson-Pant 1997, p. 44). Advocates for women's empowerment maintain that political empowerment is sustainable only if it is accompanied and supported by other types of empowerment–namely economic and legal, both of which are strongly associated with women's levels of literacy.

Foreign assistance programs have played a role in enhancing women's involvement in the political and legal arena in Nepal. One example is a USAID-funded program started in 1996 that focuses on educating women about their legal rights and getting them involved in advocacy-related activities. The Legal Rights, Responsibility, and Advocacy project (referred to as the Legal Literacy Project)[58] is implemented by The Asia Foundation and their local partner NGOs. This program includes a post-literacy course with an emphasis on increasing women's legal and political knowledge and awareness, as well as the formation of advocacy groups.

Recognizing the connection between women's literacy and legal rights, USAID/Nepal has been working to strengthen their empowerment with its Women's Empowerment Program, led by Pact. The program aims to increase "women's participation in basic literacy, legal literacy and economic participation activities" so that they may "initiate collective social actions" and "increase the influence they have in household decision making, and participate in decisions over the allocation of their own income" (Dhakal and Sheikh, 1997).

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[57] Nepal has been implementing a series of five year development plans since 1952. The *Eighth Five Year Development Plan (1992-1997)* has a section on decentralization and another on women in development as part of its national policy. During this planning period, UNDP proposed two programs to the government. Upon their approval, it initiated gender mainstreaming and a local governance program, beginning in 1995. UNDP worked with the government as its national counterpart.

[58] Legal Literacy is the name of the program the Asia Foundation is implementing in the villages in Nepal under this project.

Both programs aim to support and promote women's participation in community building and governance at the grassroots level. A main entry point is the local women's group or *samuha* which may include savings and loan programs as part of its operating mechanism. These groups may also include other activities that are decided by the women who participate in this program as a group and not on an individual level (UNDP, 2001).

5.5.2 Measures of Political Awareness and Participation

The GWE-PRA study hypothesized that, as women increase their literacy skills, they will not only be more likely to want to engage in politics, they will begin to take more action. Thus, the study examines women's changes in political knowledge and behavior over time and assesses that change in relation to their literacy skills. Indicators of political awareness and participation include the proportion of respondents who: 1) have knowledge of political issues and processes, and 2) participate in the political process by voting or holding political office.

The GWE-PRA research attempted to determine the extent to which literacy class participation affects women's political awareness and participation. Women in the sample were asked questions to assess their level of knowledge of local political affairs, their attitudes toward political participation, and whether or not they participated in political activities, such as voting in the local or national elections. The questions aimed to assess the extent of their knowledge about local current affairs, their attitudes toward and their interest in participating in politics.

It should be noted that neither the HEAL nor the BPEP program have components that teach legal literacy or emphasize political participation. None of the women in either the experimental or control group participated in the USAID-Nepal Women's Empowerment Program, which began more than a year after the start of the GWE-PRA research. Only one of the women in the experimental group participated in the Asia Foundation Legal Literacy program after beginning the GWE-PRA study.[59] Additionally, none of the women in the control group were enrolled in this program after beginning the study.

One should also keep in mind that over the past few years, particularly during the period that this study was underway, Nepal has been in a state of political turmoil, and the country's political future remains uncertain. Under these conditions, discussing politics or contemplating participating in the process is regarded by many as threatening and possibly dangerous.

To assess women's awareness and participation in local political affairs, the following research questions were explored.

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[59] One case was not enough to affect the percentages or alter the results of statistical tests.

1. Did women's knowledge, attitudes, and practices related to political affairs significantly improve from Year 1 to Year 3?
2. To what extent did women's participation in literacy classes contribute to improvements in their knowledge, attitudes, and practices related to political affairs practices during the three-year period?
3. To what extent did other factors, including age, district, literacy skills, level of literacy class participation, SES and language have an impact on changes in women's knowledge, attitudes, and practices related to political affairs?

5.5.3 Knowledge of Political Affairs

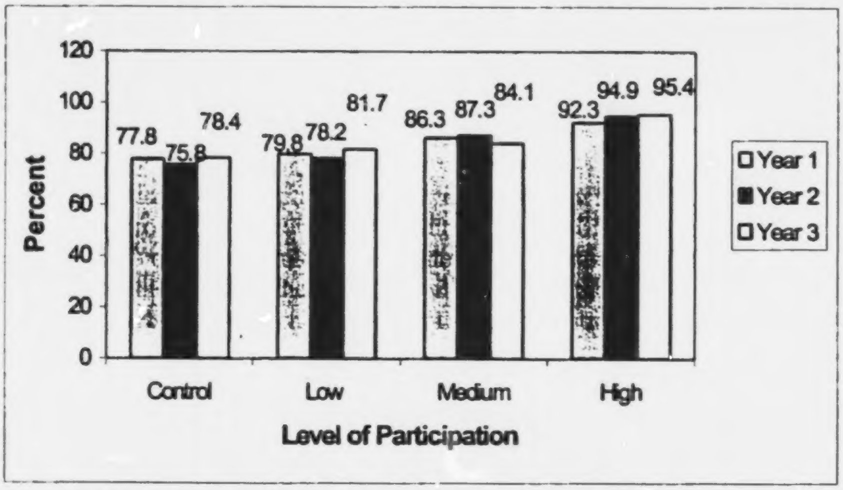
Five questions were used to assess women's knowledge of political affairs. They were asked to provide: 1) information about the policy of electing female representative from each ward of the Village Development Committee (VDC), 2) the minimum age for voting, 3) the name of their VDC, 4) the name of the VDC chairperson, and 5) the name of the Member of Parliament (MP) of their constitutional area.

5.5.3.1 Knowledge of National Policy on Electing a Female Representative

Since 1990, the Nepali government has been increasing opportunities for women to enter local and national politics. In 1991, the VDC Act was passed by Parliament, making it compulsory to elect at least one female ward member from each of the nine wards of one VDC. The first political knowledge question asked in the GWE-PRA survey concerned whether women knew about this policy. Awareness of the policy is important because it enables women to become candidates themselves or to support other female candidates who will represent them politically.

A large proportion of women in the sample (84.1%) had heard about this policy in Year 1, when the study began. This was probably the result of efforts to disseminate information about the policy and timing of the elections. This policy was introduced as a new and compulsory component of national politics after 1991. It received widespread publicity during the local and national level elections of 1997 and 1998, as it became a major tool for soliciting votes. Publicity was ensured at the national level through television and radio broadcasts and at the district and village level through posters and election campaign speeches by political candidates and their supporters.

Figure 33 presents the proportion of women at each level of literacy class participation who had heard of this policy. In Year 1, at the beginning of the study, most women in the sample were already aware of its existence. Increases during the period in the number of women who knew about the policy were very small for all groups. No significant[60] differences from Year 1 to Year 3 in women's knowledge of this policy existed for either the experimental group or the control group. Similarly, no significant[61] differences between Year 1 and Year 3 were found among women in the experimental group for any level of literacy class participation.



Year 1 Total n=967 (Control n=194, "Low" n=262, "Medium" n=315, "High" n=196)
Year 2 Total n=966 (Control n=194, "Low" n=261, "Medium" n=315, "High" n=196)
Year 3 Total n=967 (Control n=194, "Low" n=262, "Medium" n=315, "High" n=196)

Figure 33: Percentage of Women by Level of Literacy Class Participation Who Knew About National Policy on Electing a Female Representative

5.5.3.2 Minimum Voting Age

The voting age in Nepal changed from 21 to 18 in 1990. The second political knowledge question in the GWE-PRA survey concerned whether women knew the legal voting age. As shown in Figure 34, only a small percentage of women knew the correct voting age. In all three years, women in the experimental group (across all levels of literacy class participation) had a higher knowledge of the voting age than women in the control group, and women who attained "high" levels of literacy class participation demonstrated the greatest knowledge.

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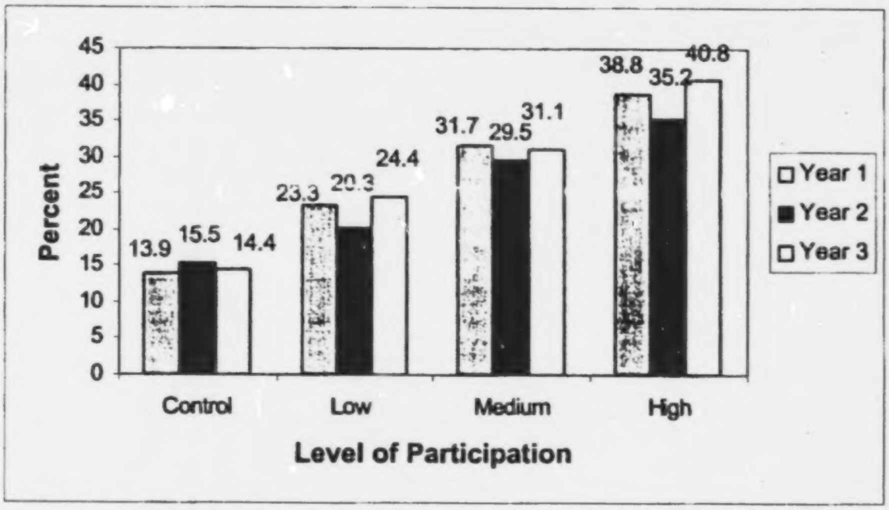
[60] For the Control Group McNemar's x^2=(2, N=194), p =.1.000, for the Experimental Group, McNemar's x^2=(2, N=773), p =.814.

[61] For "Low" level McNemar's x^2=(2, N=262), p =.635; for "Medium" level McNemar's x^2=(2, N =315), p =.477; for "High" level McNemar's x^2=(2, N =196), p=.263.



Year 1 Total n=967 (Control n=194, "Low" n=262, "Medium" n=315, "High" n=196)
Year 2 Total n=966 (Control n=194, "Low" n=261, "Medium" n=315, "High" n=196)
Year 3 Total n=967 (Control n=194, "Low" n=262, "Medium" n=315, "High" n=196)

Figure 34: Percentage of Women Who Knew Voting Age by Level of Literacy Class Participation

However, no significant[62] differences were found from Year 1 to Year 3 in the proportion of women who knew the voting age were found for either the experimental group or the control group. When examined by level of literacy class participation, no significant[63] differences between Year 1 and Year 3 existed for women at any level of literacy class participation.

A possible explanation for this low level of knowledge or the absence of any substantial increase in knowledge of the legal voting age during the period may be that many women in rural Nepal have difficulty in accurately responding to age-related questions. Even when asked about their own or another person's age, they typically report a range instead of a definite number. Additionally, most women were already registered to vote (see Figure 38 in Section 5.5.4) when they were asked the question about the legal voting age, which may be an indication that they were not directly affected by the policy changes regarding voting age. Nevertheless, participation in the literacy classes did not appear to result in substantial increases in women's knowledge about the legal voting age.

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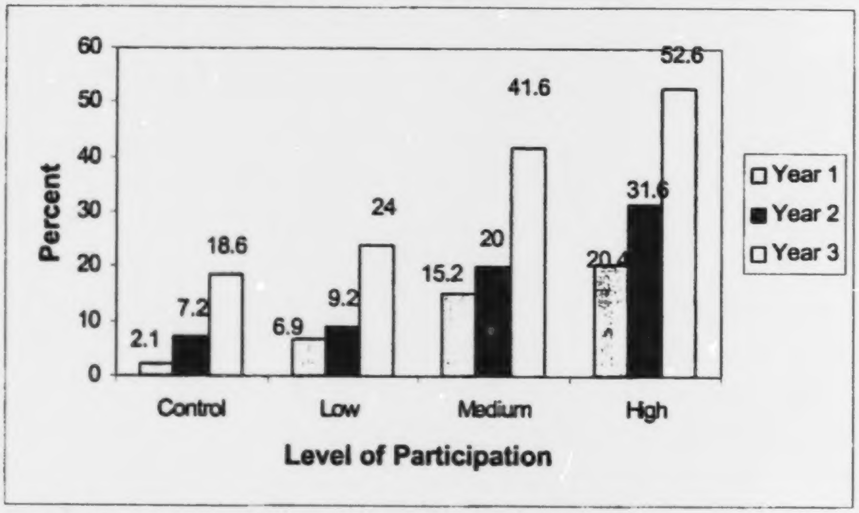
[62] For the Control Group McNemar's x^2=(2, $\underline{N}$=194), $\underline{p}$ =.738, for the Experimental Group, McNemar's x^2=(2, $\underline{N}$=773), $\underline{p}$ =.771.

[63] For "Low" level McNemar's x^2=(2, $\underline{N}$=262), $\underline{p}$ =.627; for "Medium" level McNemar's x^2=(2, $\underline{N}$ =315), $\underline{p}$ =.784; for "High" level McNemar's x^2=(2, $\underline{N}$ =196), $\underline{p}$=.396.

However, this in not unexpected, since it was not one of the topics covered in the curriculum.

5.5.3.3 Name of Member of Parliament

In both the control group and the experimental group, the proportion of women who knew the name of the Member of Parliament in their constitutional area significantly[64] increased from Year 1 to Year 3. Similarly, differences between Year 1 and Year 3 were significant[65] for women at all levels of literacy class participation. Figure 35 shows the proportion of women in each group who knew the name of the Member of Parliament in their constitutional area by level of literacy class participation.



Year 1 Total n=967 (Control n=194, "Low" n=262, "Medium" n=315, "High" n=196)
Year 2 Total n=966 (Control n=194, "Low" n=261, "Medium" n=315, "High" n=196)
Year 3 Total n=967 (Control n=194, "Low" n=262, "Medium" n=315, "High" n=196)

Figure 35: Percentage of Women Who Know the Name of the Member of Parliament of Their Constitutional Area by Level of Literacy Class Participation

In Year 1, the percentage of women having knowledge of the MP's name was relatively small in all groups. Only 20.4% of women who attained "high" levels of literacy class participation group could provide his name. Women in "medium," and "low" groups and in the control group had even less knowledge of their MP's name (15.2%, 6.9% and 2.1%, respectively). However, women's knowledge increased considerably over time. Women in the "high" literacy class participation group had the largest percentage point increase (32.2 percentage points), followed by women in the "medium," "low" and control groups (26.4, 17.1 and 16.5 percentage points, respectively). Thus, it is likely that the literacy classes had some impact on women's knowledge of the MP's name. It is possible women with "high" literacy exposure were more likely to see printed material and discuss the MP's role during class than women with less or no exposure to literacy classes. However, increases in the control group indicate that other factors contributed to these increases, as well. One explanation may be that the local MP became a more visible political figure over the three years, and hence, his name was better known in local communities.

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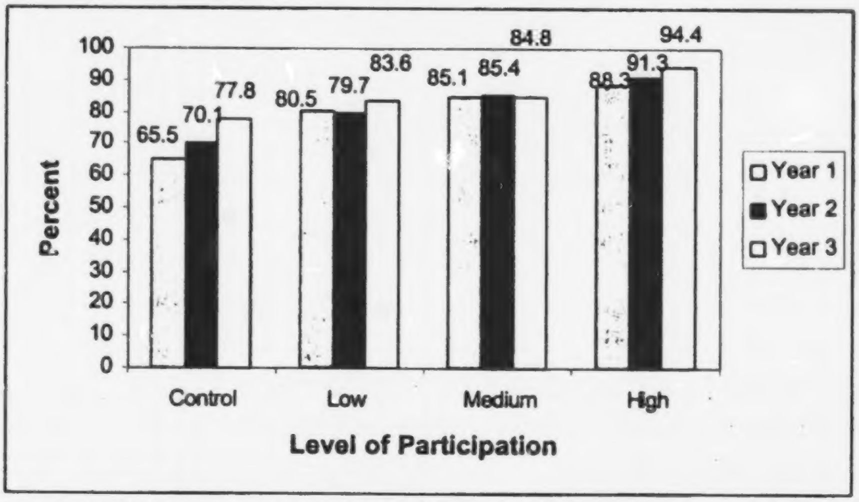
[64] For the Control Group McNemar's x^2=(2, N=194), p =.000, for the Experimental Group, McNemar's x^2=(2, N=773), p =.000.

[65] For "Low" level McNemar's x^2=(2, N=262), p =.000; for "Medium" level McNemar's x^2=(2, N =315), p =.000; for "High" level McNemar's x^2=(2, N =196), p=. 000.

5.5.3.4 Name of the VDC

Women were asked to give the name of the VDC in which they resided. In the control group, the proportion of women who knew the name of their VDC increased significantly[66] from Year 1 to Year 3 (see Figure 36). However, no significant increases were observed in the experimental group. When responses to this question were examined by level of literacy class participation, significant[67] increases in the proportion of women who knew the name of the VDC were found for those who attained "high" levels of literacy class participation but not for women who achieved "medium" or "low" levels.



Year 1 Total n=967 (Control n=194, "Low" n=262, "Medium" n=315, "High" n=196)
Year 2 Total n=966 (Control n=194, "Low" n=261, "Medium" n=315, "High" n=196)
Year 3 Total n=967 (Control n=194, "Low" n=262, "Medium" n=315, "High" n=196)

Figure 36: Percentage of Women Who Knew the Name of the VDC by Level of Literacy Class Participation

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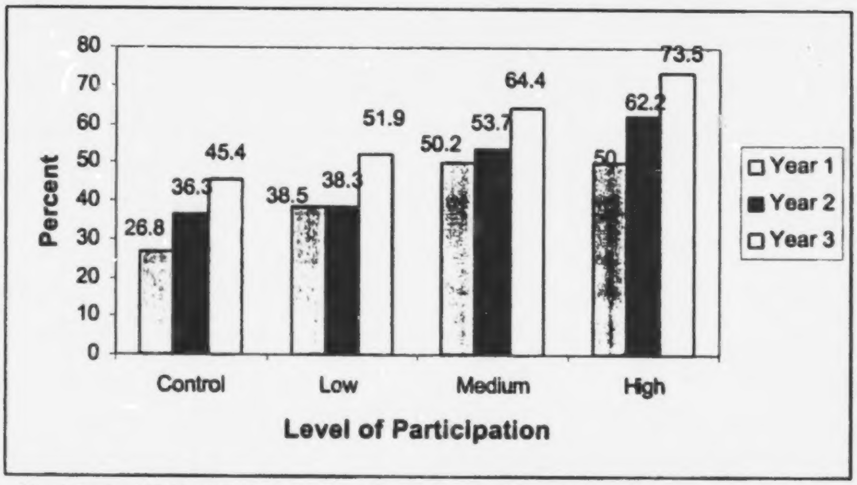
[66] For the Control Group McNemar's x^2=(2, N=194), p =.001, for the Experimental Group, McNemar's x^2=(2, N=773), p =.110.

[67] For "Low" level McNemar's x^2=(2, N=262), p =.419; for "Medium" level McNemar's x^2=(2, N =315), p =1.000; for "High" level McNemar's x^2=(2, N =196), p=. 012.

5.5.3.5 Name of the VDC Chairperson

In both the control group and the experimental group, the proportion of women who knew the name of the VDC chairperson significantly[68] increased from Year 1 to Year 3. Similarly, differences between Year 1 and Year 3 were significant[69] for women at all levels of literacy class participation. In Year 1, around half of the women who attained "high" or "medium" levels of literacy class participation levels knew the VDC chairperson's name in Year 1, while women in the control group and those with "low" levels of literacy class participation showed less knowledge (26.8% and 38.5% respectively) (see Figure 37).



Year 1 Total n=967 (Control n=194, "Low" n=262, "Medium" n=315, "High" n=196)
Year 2 Total n=965 (Control n=193, "Low" n=261, "Medium" n=315, "High" n=196)
Year 3 Total n=967 (Control n=194, "Low" n=262, "Medium" n=315, "High" n=196)

Figure 37: Percentage of Women Who Knew the Name of the VDC Chairperson by Level of Literacy Class Participation

Over the three-year period, knowledge of the name of the VDC chairperson increased in all groups. However, women who attained "high" levels of literacy class participation showed the greatest increase (23.5 percentage points). The second largest increase occurred among women in the control group (18.6 percentage points). Women with "low" and "medium" levels of participation showed similar increases (13.4 and 14.2 percentage points, respectively). Thus, we concluded that participation in the literacy classes may have had an impact on women's knowledge of the name of the VDC chairperson. However, once again, other factors also appear to have contributed to these changes as well, since increases were also observed among women in the control group as well as the experimental group regarding this question.

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[68] For the Control Group McNemar's x^2=(2, N=194), p =.000, for the Experimental Group, McNemar's x^2=(2, N=773), p =.000.

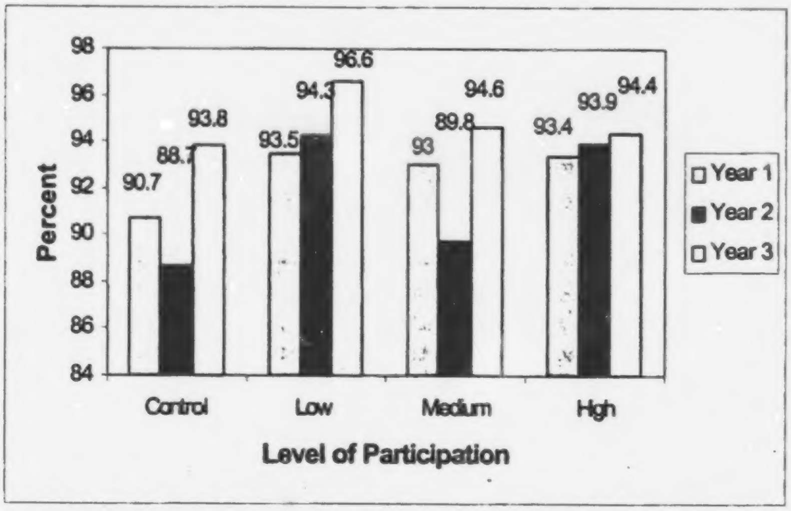
[69] For "Low" level McNemar's x^2=(2, N=262), p =.000; for "Medium" level McNemar's x^2=(2, N =315), p =.000; for "High" level McNemar's x^2=(2, N =196), p=. 000.

5.5.4 Political Practices

In addition to demonstrating their knowledge of their political surroundings, women were asked to report whether or not they were registered to vote. As Figure 38 illustrates, most women in the sample were registered to vote in Year 1. In the experimental group, the proportion of women who were registered to vote increased significantly[70] from Year 1 to Year 3, whereas no significant increases were observed in the control group.

Additionally, the proportion of women who were registered to vote declined slightly in Year 2 and increased in Year 3 for both groups.

Figure 38 depicts the proportion of participants who were registered to vote by level of literacy class participation. This figure shows a pattern of decreases in Year 2 for those within the control group and those with "medium" levels of literacy class participation, followed by increases in Year 3.



Year 1 Total n=967 (Control n=194, "Low" n=262, "Medium" n=315, "High" n=196)
Year 2 Total n=966 (Control n=194, "Low" n=261, "Medium" n=315, "High" n=196)
Year 3 Total n=967 (Control n=194, "Low" n=262, "Medium" n=315, "High" n=196)

Figure 38: Percentage of Women Who Were Registered to Vote by Level of Literacy Class Participation

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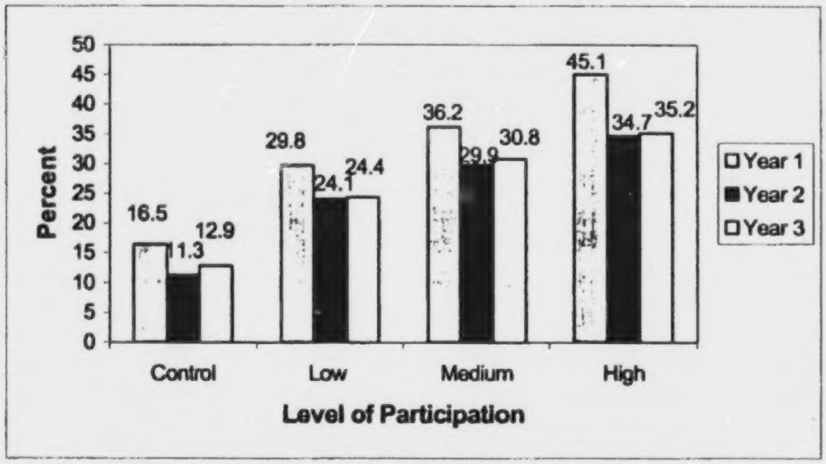
[70] For the Control Group McNemar's x^2=(2, N=194), p =.180, for the Experimental Group, McNemar's x^2=(2, N=773), p =.049.

These inconsistencies across years could indicate that some of the women who had registered to vote in Year 1 mistakenly believed that it was necessary to re-register to vote every year and had not done so. If this were the case, there is a need for greater information dissemination about what is required for women to be eligible to vote. It is also possible that some women misunderstood the question and thought they were being asked if they had registered to vote "this year." A third possibility is that some women forgot they had registered or had not been truthful when asked the question the first year. It is likely that all of these factors were at play.

5.5.5 Attitudes Toward Politics

Women's attitudes toward politics were gauged by asking two questions: 1) Do you think it is possible for you to become a local representative of your ward? and 2) Are you interested in becoming a local representative of your ward? Despite efforts by government and NGOs to involve women in politics, over the three-year period, women in the sample showed signs of becoming disillusioned with politics in general. Every year during the three years, fewer women thought it possible to become a local representative, and even fewer women reported they were interested in becoming one. This is probably related to the overall instability of the political situation in Nepal during the period and may reflect larger trends throughout the country. During periods of political uncertainty, it is not unusual for both men and women to report feelings of discouragement and powerlessness or for interest in participating in the political process to decline.

As shown in Figure 39, the proportion of women in each group who thought it possible to become a local representative dropped by about 3 to 10 percentage points from Year 1 to Year 3. The decrease was statistically significant[71] for women in the experimental group but not for women in the control group.



Year 1 Total n=966 (Control n=194, "Low" n=262, "Medium" n=315, "High" n=195)
Year 2 Total n=965 (Control n=194, "Low" n=261, "Medium" n=315, "High" n=196)
Year 3 Total n=967 (Control n=194, "Low" n=262, "Medium" n=314, "High" n=196)

Figure 39: Percentage of Women by Level of Literacy Class Participation Who Thought it Possible to Become a Local Representative

Initially (in Year 1), the greatest optimism about prospects for becoming a ward representative was among women who attained "high" levels of literacy class participation. This group also showed the greatest decline in the proportion who thought it possible to be elected as ward representative. Decreases were statistically significant[72] for women in the "high" group but not for women in the "medium" or "low" group.

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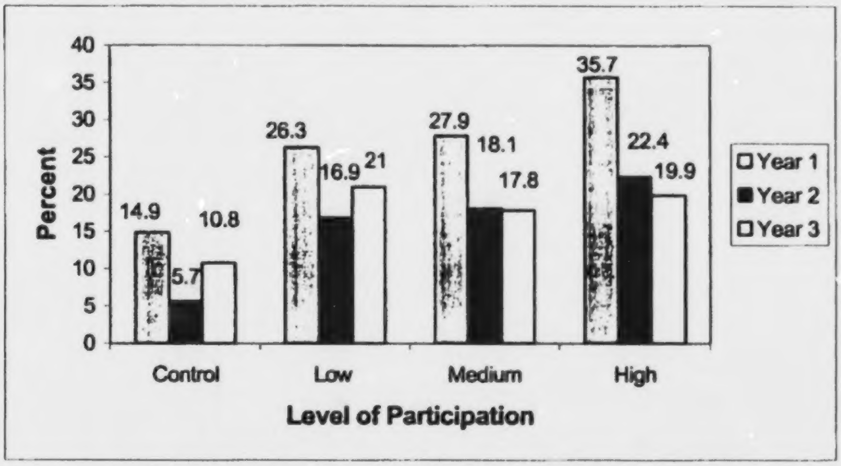
[71] For the Control Group McNemar's x^2=(2, N=194), p =.360, for the Experimental Group, McNemar's x^2=(2, N=773), p =.002.

[72] For "Low" level McNemar's x^2=(2, N=262), p =.130; for "Medium" level McNemar's x^2=(2, N =315), p =104; for "High" level McNemar's x^2=(2, N =196), p=. 034.

The decline over the period in women who were interested in becoming a ward representative themselves was even more dramatic than the decrease in the proportion who thought it was possible (see Figure 40).



Year 1 Total n=966 (Control n=194, "Low" n=262, "Medium" n=315, "High" n=195)
Year 2 Total n=965 (Control n=194, "Low" n=261, "Medium" n=315, "High" n=196)
Year 3 Total n=967 (Control n=194, "Low" n=262, "Medium" n=314, "High" n=196)

Figure 40: Percentage of Women Interested in Becoming a Local Representative by Level of Literacy Class Participation

For example, interest in becoming a ward representative declined by 15.8 percentage points among women who attained a "high" level of literacy class participation and by 10.1 points for women who achieved "medium" levels of participation. The decrease was statistically significant[73] for women in the experimental group but not for women in the control group. Additionally, decreases were statistically significant[74] for women who attained "high" and "medium" levels of literacy class participation but not for women who attained a "low" level of participation.

At first it seems counterintuitive that women with higher levels of literacy class participation would exhibit the greatest signs of declining "optimism" about their political possibilities. However, those who remained in the program for longer periods of time may have had more exposure to newspapers or may have been more inclined to listen to political discussions than they did prior to participating in the program. This increased access to information about the current political situation may, in turn, have led to growing pessimism about the potential (or value) of serving as an elected representative.

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[73] For the Control Group McNemar's x^2=(2, $\underline{N}$=194), $\underline{p}$ =.229, for the Experimental Group, McNemar's x^2=(2, $\underline{N}$=773), $\underline{p}$ =.000.

[74] For "Low" level McNemar's x^2=(2, $\underline{N}$=262), $\underline{p}$ =.109; for "Medium" level McNemar's x^2=(2, $\underline{N}$ =315), $\underline{p}$ =000; for "High" level McNemar's x^2=(2, $\underline{N}$ =196), $\underline{p}$=. 000.

Additionally, women embarking on a new literacy program frequently start with unreasonably high expectations about the level of literacy proficiency they would reach in a short period of time. Those who stayed in the program long enough to develop some basic-literacy skills may have begun to realize that their skills were still very limited. If they believed that reaching a high level of literacy proficiency was necessary to achieve certain things (such as serving in an elected office), many of these women may have readjusted their expectations based on their assessment of their own abilities.

Other factors may also play a role in women's interest in serving as an elected representative. Table 19 presents the percentage of women interested in serving as a local representative by district, language, and age.

Table 19: Percent of Women Who Were Interested in Becoming a Local Representative

Variables	Percentages			% Pt. Change	
	Year 1 %	Year 2 %	Year 3 %	Year 1-2	Year 1-3
Age Group					
15-24 (n=223)	21.5	12.1	13.9	-9.4	-7.6
25-34 (n= 409)	26.4	13.2	14.4	-13.2	-12.0
35-44 (n=263)	28.1	20.2	24.0	-7.9	-4.1
45 and older	36.6	31.0	25.4	-5.6	-11.2
District					
Jhapa (n=167)	37.7	21.6	22.8	-16.1	-14.9
Dhanusha (n=174)	44.3	23.1	37.9	-21.2	-6.4
Chitwan (n=160)	21.9	11.3	5.6	-10.6	-16.3
Nawalparasi (n=174)	21.3	10.9	12.1	-10.4	-9.2
Banke (n=138)	15.9	18.8	18.1	2.9	2.2
Kailali (n=154)	14.3	11.0	7.8	-3.3	-6.5
Language Spoken at Home					
Non-Nepali (n=517)	26.1	15.5	21.1	-10.6	-5.0
Nepali (n=450)	26.9	16.9	13.8	-10.0	-13.1

As shown, the women who were 45 years of age or older were most interested in becoming a local representative over the three years. However, this age group also had a fairly high decline in the proportion of women interested in serving as a local representative during the period (11.2 percentage points).

The mean age of those who were interested in serving as a representative of the VDC was significantly[75] higher than for those who were not interested (see Table 20) in all three years.

Table 20: Mean SES, Literacy Scores and Age of Women by Whether or Not They Were Interested in Becoming a Ward Representative

Variables	Mean Year 1 (n=966)	 Year 2 (n=967)	 Year 3 (n=967)
SES			
Interested	5.50	5.73	5.49
Not Interested	5.44	5.41	5.31
Difference	0.06	0.32	0.18
Literacy Score			
Interested	14.93	18.97	16.99
Not Interested	14.86	17.05	16.81
Difference	0.07	1.92	0.18
Age (in Year One)			
Interested	32.33	33.88	33.40
Not Interested	31.01	30.88	30.92
Difference	1.30**	3.00**	2.48***

*** Significant at the .001 level of significance, using Independent Sample t-test.
** Significant at the .05 level of significance, using Independent Sample t-test.

Age and SES were correlated (i.e. older women tended to have higher SES scores), and the mean SES of women who were interested in serving as a local representative was slightly higher in all three years than those who had no interest in serving. However, when the relationship between SES and interest in serving as a local representative was examined apart from age, no significant[76] differences in SES scores were found between those interested in serving as a local representative and those who were not interested.

Over the three years, the proportion of women interested in serving as a local representative decreased or stayed about the same in all districts. The district with the largest percentage of women interested in serving as a local representative was Dhanusha. About 44.3%, 23.1% and 37.9% of women in this district in years one, two and three, respectively, were interested in serving as a ward representative. All of the women in this district were non-Nepali speakers. The largest decreases in the proportion of women interested in serving as a ward representative were in Chitwan and Jhapa Districts.

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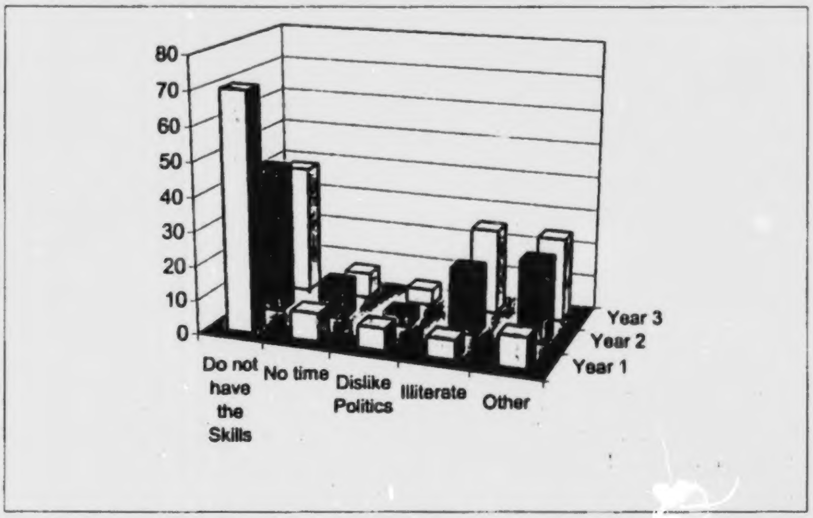
[75] Using Independent Sample t-tests to compare means, results for Year 1 were: t (2, 964) =-1.32, p=.033; for Year 2 t (2, 963) -4.07, p=.000, for Year 3 t (2, 964) -3.48, p=. 001.

[76] Independent Sample t-tests results for Year 1 were: t (2, 964) =-.375, p=.708; for Year 2 t (2, 964) -1.65, p=.099, for Year 3 t (2, 965) .927, p=.354.

In Year 1, about the same proportion of Nepali and non-Nepali speakers were interested in serving as a representative (26.9% and 26.1%, respectively). By Year 3, interest had dropped among Nepali speakers by 13.1 percentage points) and by 5.0 percentage points among non-Nepali speakers. Further analysis revealed that of the non-Nepali speakers interested in serving as a representative, by far the largest proportion was among the Maithali (30.1% 25.6% and 38.6% in years one, two and three, respectively), who were located primarily in Dhanusha District. The largest group of Nepali speakers interested in serving as a representative was in Jhapa District, where 44.5%, 25.2% and 25.2% of the Nepali-speakers in years one, two and three, respectively, were interested in serving as a representative. Such variations in the proportion of women interested in serving as a ward representative were likely tied to the local social and political context in the areas in which these women reside.

When women were asked the reasons why they were not interested in serving as an elected representative of the ward, many of them said that they did not have the necessary skills. That reason was less frequently mentioned over time. The overall percentage of women who said they were incapable of performing that job decreased from 70.2% to 38.4%. However, reasons such as "being illiterate" and "other"[77] increased substantially (by 19.3 and 15.3 percentage points, respectively). "No time" and "dislike for politics" were also reasons mentioned by some of the women for not becoming involved in formal politics. This information is graphically depicted in Figure 41.



Year 1 Total n=711; Year 2 Total n=810: Year 3 Total n=796

Figure 41: Reasons for Lack of Interest in Serving as a Local Representative

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[77] "Other" includes: "husband does not allow," "no use," "no money," "social problems," and "health problems."

5.5.6 The Role of Literacy in Political Knowledge, Attitudes and Practices

Table 21 highlights the relationship between women's literacy skills and their responses to questions aimed at measuring their political knowledge, attitudes, and practices.

Table 21: Mean Literacy Scores by Responses to Political Questions

Variables	Mean Literacy Scores Year 1 (n=967)	Year 2 (n=967)	Year 3 (n=967)
Knowledge			
Knew about the policy of electing female representative from each ward?			
Yes	15.90	18.42	17.90
No	9.44	11.75	11.02
Difference	6.46***	6.67***	6.88***
Knew correct voting age?			
Yes	21.75	24.60	24.70
No	12.30	14.85	13.76
Difference	9.45***	9.75***	10.94***
Knew name of MP?			
Yes	24.37	25.59	22.88
No	13.66	15.66	13.46
Difference	10.71***	9.96***	9.22***
Know name of VDC?			
Yes	15.99	18.53	17.74
No	10.27	11.98	11.76
Difference	5.72***	6.55***	5.98***
Knew name of VDC chairperson?			
Yes	17.50	19.93	19.48
No	12.96	15.00	13.07
Difference	4.54***	4.93***	6.41***
Practice			
Registered to vote?			
Yes	14.99	17.37	16.96
No	13.47	17.21	14.59
Difference	1.52	0.16	2.37
Attitudes			
Thought it possible to become a ward representative?			
Yes	17.61	22.21	21.22
No	13.58	15.65	15.27
Difference	4.03***	6.56**	5.95***
Interested in becoming a ward representative?			
Yes	14.93	18.97	16.99
No	14.86	17.05	16.81
Difference	0.07	1.92	0.18

*** Significant at the .001 level of significance, using Independent Sample t-test;
** Significant at the .05 level of significance, using Independent Sample t-test.

The above table shows that for most of the questions, women who answered affirmatively (i.e., demonstrating their knowledge of pertinent political information or positive attitudes and practices toward political involvement) had significantly higher mean literacy scores than those responding negatively to these questions in all three years.

Significantly higher literacy scores were found for women who: 1) knew about the policy for electing a female representative from each ward, 2) knew the correct voting age, 3) knew the name of the MP, 4) knew the name of the VDC, 5) knew the name of the chairperson of the VDC, 6), and thought it possible to become a representative of the ward. Literacy scores for women who were registered to vote or who were interested in becoming a representative of the ward were not significantly different than those of women who were not.

5.5.7 Summary of Political Awareness and Participation

Table 22 summarizes changes over the three years in women's political knowledge, attitudes, and practices. Of the eight questions examined in this section, the one measuring women's knowledge of the VDC chairperson seemed to most clearly show an impact on women's knowledge related to their participation in the literacy classes. The proportion of women in the experimental group who could provide the name of the VDC chairperson increased significantly from Year 1 to Year 3, but no significant increase was observed among women in the control group.

Table 22: Summary of Changes in Political Knowledge, Attitudes and Practices

	Year 1 to Year 3 Significant Change?	
Variable	Experimental Group	Control Group
Knowledge:		
Knows the national policy of electing female representative.	No	No
Knows the minimum age for voting	No	No
Knows the name of their VDC	No	+Yes***
Knows the name of the VDC chairperson	+Yes***	No
Knows the name of the MP	+Yes***	+Yes***
Attitudes:		
Thinks it possible to become ward representative	-Yes***	No
Interested in becoming ward representative	-Yes***	No
Practices:		
Registered to vote	+Yes***	No

*** Significant at the .001 level of significance, using McNemar's test of Correlated Proportions.

The proportion of women who could provide the name of the MP significantly increased in both the experimental group and the control group. The greatest increases were among women who attained "high" levels of literacy class participation, suggesting that more extensive participation of these women in the literacy classes may have contributed to their increased familiarity with the MP. Nonetheless, significant increases in the control group indicate that other factors also played a role. For example, greater visibility of the MP in these communities over the period may have also led to the MPs' increased recognition in both the experimental and the control group.

No significant changes were observed in either the experimental or the control group regarding their knowledge about the policy requiring that at least one woman be elected to serve the ward in each VDC. However, most of the women already knew about this policy in Year 1 when the study began.

There was considerable confusion about the minimum voting age. This is probably related to the difficulties that women in the study had in general with calculating ages. Many of these women were unsure of their own ages or the ages of their children. Only a small percentage of women knew the correct voting age. In all three years, (including Year 1, when the study began) a higher proportion of women in the experimental group across all levels of literacy class participation had knowledge of the voting age than women in the control group—the highest proportion was among women who attained "high" levels of literacy class participation.

Most women in the sample were registered to vote in Year 1 when the study began. In the experimental group, the proportion of women who were registered to vote increased significantly from Year 1 to Year 3, while, no significant increases were observed in the control group. However, reported registration varied from year to year, with decreases in Year 2 for some of the women. These inconsistencies across years could indicate that some of the women who had registered to vote in Year 1 mistakenly believed that it was necessary to re-register to vote every year and had not done so. If this were the case, there is a need for greater information dissemination about what is required for women to be eligible to vote. It is also possible that some women thought they were being asked if they had registered to vote "this year" or that they either forgot that they had registered or had not been truthful when asked the question the first year. It is likely that a combination of all of these factors was at play.

The proportion of the women in the experimental group who reported that they thought it possible to become a ward representative, as well as the proportion who were interested in becoming one decreased from Year 1 to Year 3. Decreases were statistically significant for the experimental group but not for the control group. Among the most prominent reasons cited for their lack of interest were "illiteracy," followed by "lack of skills and ability," and "social problems," "no use," "no money," "husband does not allow," and "health problems."

Other factors, including age, SES, district, and language were examined with respect to women's interest in becoming a local representative. The highest proportion of women who were interested in becoming a ward representative was among those 45 years of age or older. However, the decline in interest over the three-year period for this age group was fairly high (11.2 percentage points). The mean age of those who were interested in serving as a representative of the VDC was significantly[78] higher than for those who were not interested in all three years.

No significant difference in SES was found between those women interested in serving as ward representative and those who were not. When interest was examined by district, it was found that, over the three years, interest in serving as a local representative decreased or stayed about the same in all districts. The district with the largest percentage of women interested in serving as a local representative was Dhanusha. All of the women in this district were non-Nepali speakers. The largest decreases in the proportion of women interested in serving as a ward representative were in Chitwan and Jhapa Districts.

In Year 1, about the same proportion of Nepali and non-Nepali speakers were interested in serving as a representative (26.9% and 26.1%, respectively). By Year 3, interest had dropped among Nepali speakers by 13.1 percentage points and by 5.0 percentage points among non-Nepali speakers.

5.6 Community Participation

In Nepal, a patriarchal social structure assigns women to restricted roles within the household and family responsibilities. Although unacceptable forms of female exploitation and violations of human rights exist, women are rarely encouraged or easily convinced to organize at the local level to fight gender and social discrimination. Many Nepali women have internalized their restricted responsibilities within a patriarchal system, making it difficult for them to envision themselves in roles outside the home. Empowerment is a slow process, hindered by the traditional, dominant Hindu social structure that uses customary norms to negate women's rights.

Two basic violations of women's human rights in Nepal are trafficking and domestic violence. Nepal is currently a center of illegal trafficking of women to other countries in Asia and the Middle East. While no precise statistics on girls' trafficking in and outside of Nepal are available, a recent study sponsored by the International Labor Organization estimated that 12,000 children are trafficked every year from Nepal (Kumar, Subedi, Gurung, and Adhikari, 2001). Trafficking affects many caste/ethnic groups, but most at risk are members of the hill ethnic group and lower castes. With little education and employment skills, impoverished girls and women face extreme economic difficulties. Lured by false promises of a better life or coerced by family members and traffickers, young women and children are vulnerable to physical exploitation. Currently, there are few political parties at the grass-roots level working against trafficking in Nepal, and few resources are allocated for human rights activities. Trafficking-prone VDCs are not encouraged to allocate resources in areas of social development, and there is not enough civil mobilization to coordinate efforts with NGOs and government agencies to deter crimes against women and children (Kumar, Subedi, Gurung, and Adhikari, 2001).

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[78] Using Independent Sample t-tests to compare means, results for Year 1 were: t (2, 964) =-1.32, p=.033; for Year 2 t (2, 963) -4.07, p=.000, for Year 3 t (2, 964) -3.48, p=. 001.

In addition to trafficking, Nepali women are constantly faced with the widespread problem of domestic violence. The causes of domestic violence in Nepal are complex and rooted in the subordinate role accorded women in private and public life (Graham & Bond, 1998). In one study conducted in 1999, 50% of the women interviewed said that they knew someone who was the victim of domestic violence. In another survey, respondents listed the perpetrators of violence as family members in 77% of incidents, and 58% reported that physical abuse was a daily occurrence (Women's International Network, 1999). Usually, little public attention is given to violence against women in the home, and the government makes no special effort to combat it. The conspiracy of silence surrounding domestic violence makes it an invisible epidemic. Failure to acknowledge that it occurs is the largest impediment to addressing the problem. Despite the efforts of several non-governmental organizations and a few police authorities in Nepal, wife beating remains a societal taboo that is yet to be addressed effectively.

Although the influence of the Hindu social structure makes it difficult for women to participate in community activities and organize to fight violations of human rights and other forms of discrimination, it has been hypothesized that women who increase their literacy skills become more active in community groups and community activities, including social, and infrastructure-related activities. Preliminary research from a 1996 case study of six rural communities and a 1997 survey of rural Nepali women suggest that women who participate in integrated empowerment programs of economic participation, basic literacy, and legal rights and advocacy interventions are more likely to increase their influence over decision making within the household and to initiate collective actions for social change. According to the research, women's groups initiated an average of 23 collective actions annually, demonstrating a link between women's increased confidence and their active participation in the life of the community. Approximately three-quarters of the advocacy activities revolved around issues of development. The rest focused on issues related to the social awareness and the social climate within the community (USAID, 1998).

According to studies sponsored by USAID, by 1998 nearly 1,000 advocacy groups had been formed by women who had increased their literacy skills (USAID, 1998). These groups have undertaken a wide variety of actions on both individual and public issues. A 1997 sample survey showed that such groups have confronted a number of social problems including domestic violence, alcoholism, and gambling. They have also campaigned for better and more accessible primary education and have called for the increased availability of oral rehydration therapy and polio vaccines. Finally, women's groups have carried out community development projects such as repairing school buildings, installing water pipes and planting community forests. The advocacy groups have spoken out on national issues such as women's right to own property, caste discrimination and trafficking of girls. Recognizing that access to income increases their decision-making role in the family and community, women have also demanded greater access to economic interventions.

5.6.1 Measures of Community Participation

The GWE-PRA research attempts to determine the extent to which literacy class participation affects women's participation in community groups and social action. The study hypothesized that, as women increase their literacy skills, they will be more likely to engage in community action. Thus, this section examines changes in women's social and community group participation over a three-year period and assesses that change in relation to their literacy skills.

To assess women's community participation, this section attempts to answer the following research questions:

1. Did women demonstrate greater participation in community groups and activities in Year 3 than in Year 1?
2. To what extent were women in the experimental group involved in fighting girls' trafficking and domestic violence compared to women in the control group?
3. To what extent did literacy contribute to an increased participation in community activities?

5.6.2 Women's Involvement in Community Issues

Five questions were asked to assess women's involvement in community-related issues and activities. Women were asked to report on: 1) their membership in at least one community group, 2) their involvement in any community development or work to improve the infrastructure of the community in the previous year, 3) their knowledge of wife beating incidents, 4) their knowledge of wife beating and girls' trafficking, and 5) their involvement in taking action against wife beating and girls' trafficking.

5.6.3 Membership in Community Groups

Women's membership in community groups increased significantly from Year 1 to Year 3 for both the experimental[79] group and the control[80] group. When women's membership in community groups was examined by level of literacy class participation, increases between Year 1 and Year 3 were significant for women across all levels of literacy class participation.[81]

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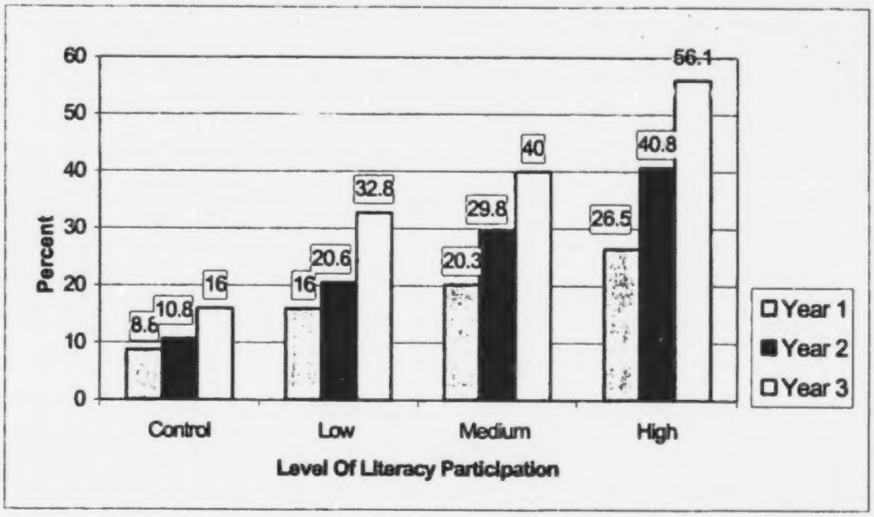
[79] McNemar's $x^2(2, \underline{N}=194)$, $\underline{p}=.013$.

[80] McNemar's $x^2(2, \underline{N}=773)$, $\underline{p}=.000$.

[81] For "low" levels McNemar's $x^2(2, \underline{N}=262)$, $\underline{p}=.013$; for "medium" levels McNemar's $x^2(2, \underline{N}=315)$, $\underline{p}=.000$; for "high" levels McNemar's $x^2(2, \underline{N}=196)$, $\underline{p}=.000$.

Figure 42 presents the proportion of women at each level of literacy class participation who were members of at least one community group at the time of the interviews.



Year 1 Total n=967 (Control n=194, "Low" n=262, "Medium" n=315, "High" n=196)
Year 2 Total n=967 (Control n= 194, "Low" n=262, "Medium" n=315, "High" n=196)
Year 3 Total n=967 (Control n= 194, "Low" n=262, "Medium" n=315, "High" n=196)

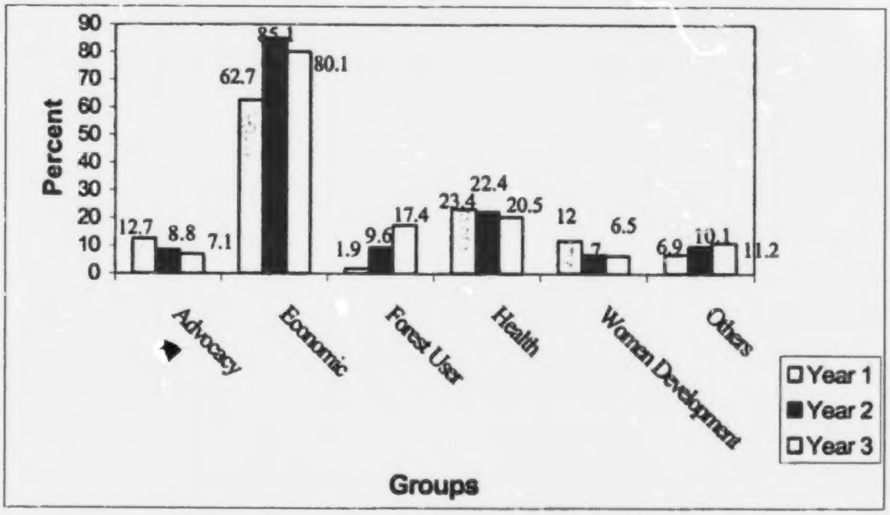
Figure 42: Percentage of Women Who Belonged to Community Groups by Level of Literacy Participation

Although differences between groups were statistically significant for all groups, women who attained "high" levels of literacy class participation over the three-year period demonstrated the greatest percentage point increase in community group participation (29.6 percentage points). Women who achieved "medium" and "low" levels of literacy class participation had similar increases in development participation over time (19.7 and 16.8 percentage points, respectively). Women in the control group had a more modest increase (7.2 percentage points). It is very likely that government campaigns and/or NGO activities were being carried out in the districts where the interviews were being conducted, which may help explain changes in community group membership among women in the control group. However, the larger increases in community participation for women who attained "high" levels of literacy class participation indicates that these women were the most positively affected by the combined effects of their experiences in the classroom and other campaigns in the community.

5.6.4 Types of Community Group Membership

Although overall community group membership increased over time, women in the experimental and the control group who participated in community groups were most attracted to economic and health groups. Membership in advocacy and women's development groups decreased over time.

Figure 43 shows an increase in participation in economic, forest users, community groups[82] and other[83] groups (17.4, 17.3 and 4.3 percentage points, respectively) among women in the experimental group over a three-year-period. Participation in advocacy groups that address issues such as alcohol, gambling, girls' trafficking and domestic violence decreased (5.6 percentage points). Similarly, membership in women's development and health groups decreased during that same period (5.5 and 2.9, respectively).



Year 1 Total n=175; Year 2 Total n=228; Year 3 Total n=322

Figure 43: Experimental Group's Participation in Community Groups in a Three-Year Period

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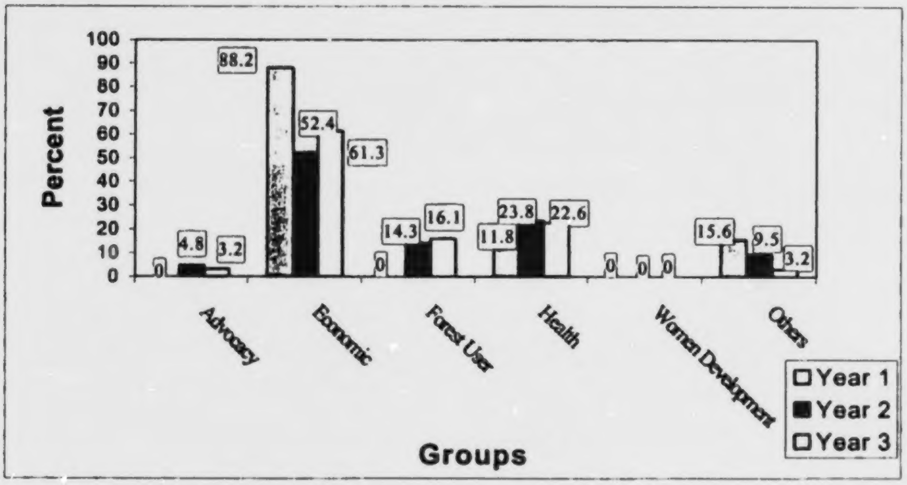
[82] Forest user community groups" are village-level groups (of men and women) that form to manage common forest resources and to conduct livelihood development activities. Activities vary depending on local needs.

[83] "Other" includes agriculture, water and non-specified community groups.

Figure 44 illustrates that although women in the control group were also interested in economic groups in Year 1, their membership in those groups decreased over time (by 26.9 percentage points). Nevertheless, participation in forest users and health groups increased (by 16.1 and 10.8, respectively) over a three-year period. Women in the control group had no involvement in women development groups and very small levels of involvement in advocacy and other groups over time.



Year 1 Total n=17; Year 2 Total n=21; Year 3 Total n=31

Figure 44: Control Group's Participation in Community Groups in a Three-Year Period

Women's choices of community groups reflect, to a large extent, the focus of government and NGO-sponsored programs in Nepal. Several organizations have combined the literacy-business-banking-empowerment approach to help women achieve economic independence through participation in income-earning activities. BPEP's objectives, for example, are to provide literacy skills and knowledge to women, and to help them become self-reliant by providing skills training to run income-generating activities. HEAL, on the other hand, focuses on reducing fertility and improving maternal and child health in Nepal. Women's interest in forestry programs and agriculture is associated with the Department of Forest's progressive forestry policies and the initiation of several projects to encourage increased production of timber in Nepal (Shresta, 1999).

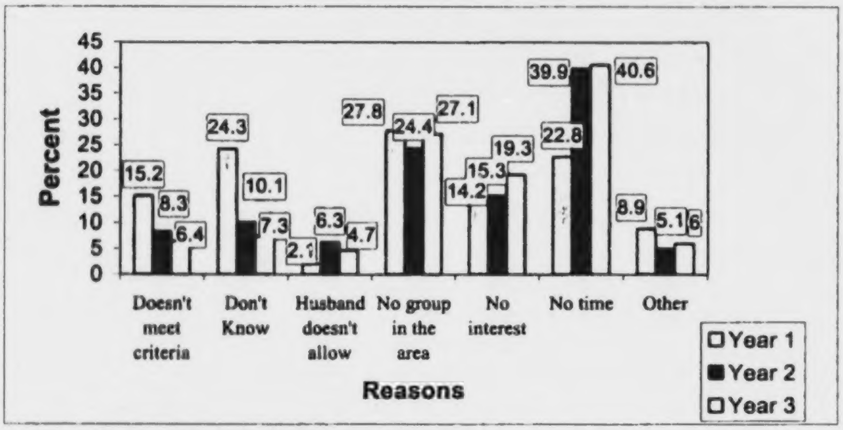
Figures 43 and 44 above indicate that even though the overall percentage of women interested in advocacy or women's development groups was low, women in the experimental group were a little more engaged in those types of activities than women in the control group. The decrease in participation in social action groups (advocacy and women's development) might be a result of a lack of focus on those issues in any of the programs, compounded by overall political tension and women's feelings of powerlessness in the face of corrupt law enforcement and political parties in Nepal. For example, according to the International Labor Organization (ILO) (2001), the protection of trafficking criminals and wife beaters by political parties and the police is widespread at the local and national level.

Since economic hardship and health issues are major concerns among women in the sample, it is reasonable to hypothesize that women might feel they can do more for themselves and their families by investing their time in economic and health groups. Nepal's economic policies are geared toward privatization and a market economy, which might serve as an incentive for women to become more active in economic groups. Furthermore, it is important to note that participation in economic and health groups might be effective in addressing the structural causes of violence against women.

5.6.5 Reasons for Not Joining a Group

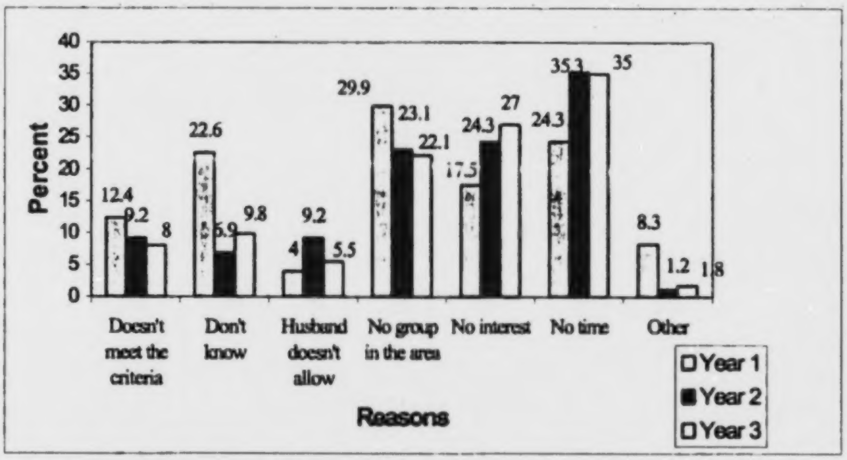
Women who were not participating in any groups were asked to report the reasons for not joining a group. Multiple reasons were noted.

Figures 45 and 46 show the percentages of women providing various reasons for not participating in a group for the experimental and the control group.



Year 1 Total n=605; Year 2 Total n=544; Year 3 Total n=451

Figure 45: Reasons for not Participating in Community Groups among Women in the Experimental Group



Year 1 Total n=177; Year 2 Total n=173; Year 3 Total n=163

Figure 46: Reasons for Not Participating in Community Groups among Women in the Control Group

In Year 1, the most common reason for not joining a group among women in the experimental group was lack of access to groups. However, in Year 3, the most common reason cited was lack of time. Over a three-year period, the percent of women who mentioned lack of time increased by 17.8 percentage points while the percent of women who mentioned lack of access decreased by 0.7 percentage points. Data also showed an increase in lack of interest (5.1 percentage points) and in the percentage of husbands who were against women's participation in literacy classes (2.6 percentage points).

The percent of women who believed they did not meet the criteria to join a group decreased by 8.8 percentage points. The percentage of women who said they did not know why they had not joined a group also decreased substantially (17 percentage points). The percentage of women who cited other[84] reasons decreased slightly over time (2.9 percentage points).

Although women in both the experimental and the control group revealed similar reasons for not joining community groups, the percentage point increase in "lack of time" among women in the experimental group was higher than among women in the control group over the period. It is possible that the experimental group's higher involvement in income-earning activities and in literacy classes were major factors contributing to their lack of time. Although "lack of interest" increased in both groups, women in the control group showed a higher percentage point increase in "lack of interest" than the women in the experimental group. The high percent of women in both groups who mentioned that no community groups existed in their area is an indication that more opportunities must be created for women to participate in community group activities. Additionally, the data suggest that local government and NGOs must improve the dissemination of information about the importance of women's groups in order to alter husbands' perceptions of those groups and increase women's interest in participation.

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[84] The category "other" included several responses. In Year 1, it included: "being new to the village," "no money, "lack of opportunity," "illiteracy, "distance," "difficulty in paying back loan," "health problems," "problems with other group members" and lack of confidence. In Year 2, it included: "inability to speak," lack of friends," "being with women from different castes," "being away from home," "other family member was a group member," "no need," "group was dissolved." In Year 3, the reasons were the same as in Year 1.

5.6.6 Involvement in Community Development Activity

Women's involvement in community development activities increased significantly from Year 1 to Year 3 for both the experimental[85] group and the control[86] group. When women's involvement in community development activities was examined by level of literacy class participation, significant increases were found between Year 1 and Year 3 for women who attained "low" and "medium" levels of literacy class participation. Increases were nearing significance ($\underline{p}=.079$) for those attaining "high" levels, but these changes were not statistically significant.[87]

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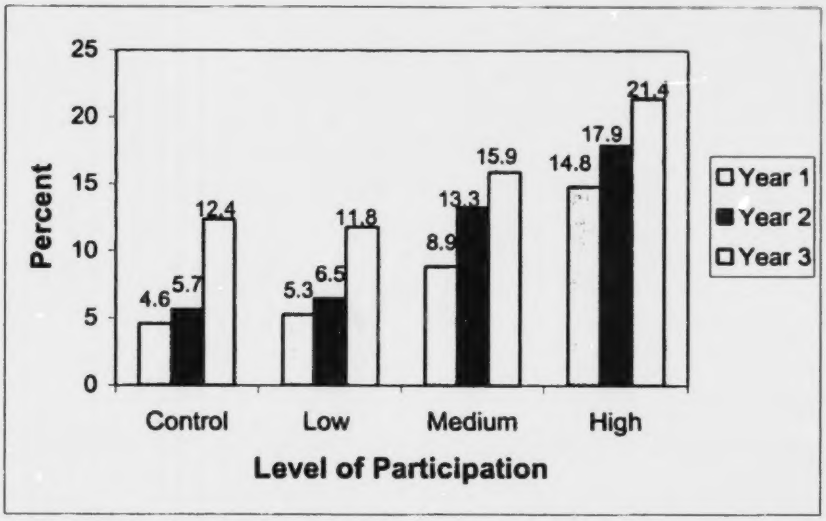
[85] McNemar's $x^2(2, \underline{N}=194)$, $\underline{p}=.011$.

[86] McNemar's $x^2(2, \underline{N}=773)$, $\underline{p}=.000$.

[87] For "low" levels McNemar's $x^2(2, \underline{N}=262)$, $\underline{p}=.009$; for "medium" levels McNemar's $x^2(2, \underline{N}=315)$, $\underline{p}=.004$; for "high" levels McNemar's $x^2(2, \underline{N}=196)$, $\underline{p}=.079$.

As shown in Figure 47, women in the control group demonstrated the greatest increase in participation in community development activities (7.8 percentage points). Women who achieved "high," "medium" and "low" levels of literacy class participation had similar increases in development participation over time (6.6, 7.0 and 6.5 percentage points, respectively). These data suggest that factors other than participation in literacy classes were largely responsible for women's participation in community development.



Year 1 Total n=967 (Control n= 194, “Low” n=262, “Medium” n=315, “High” n=196)
Year 2 Total n=966 (Control n= 194, “Low” n=261, “Medium” n=315, “High” n=196)
Year 3 Total n=967 (Control n= 194, “Low” n=262, “Medium” n=315, “High” n=196)

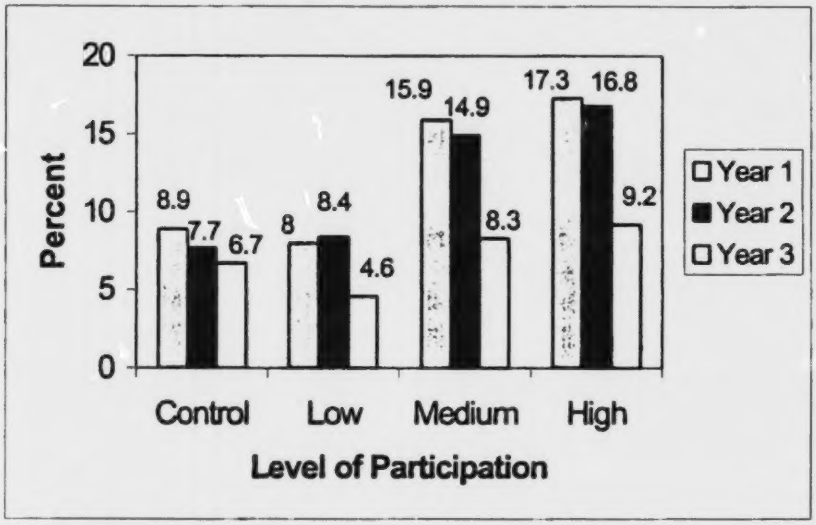
Figure 47: Percentage of Women Who Participated in Community Development Activities by Level of Literacy Class Participation

5.6.7 Awareness of and Participation in Women's/Girls' Rights Issues

Wife beating and girls' trafficking are two specific examples of violations of human rights occurring in Nepal in high numbers. According to an ILO report (2001), several community-level factors may increase the vulnerability of child trafficking: misperceptions about girls' final destination, anecdotal evidence of school teachers, politicians' involvement in trafficking, abusive school teachers, neighbors' children already trafficked, lack of employment opportunity for adolescents and proximity to roads leading to urban areas or to India. Trafficking of girls has been identified to be most prevalent in six districts of Nepal (Nuwakot, Kavre, Dhading, Sindupalchowk, Makwanpur and Ramechhap). None of these six districts were among those in the GWE-PRA study, which may explain why far fewer women said they had heard of cases of this violation than those who had heard of wife beating.

5.6.8 Girls' Trafficking

Women were asked whether they had heard of or witnessed cases of girls' trafficking in their area. Over the three-year period, the percent of women who had heard of or witnessed girls' trafficking decreased in all groups. Although declines were significant for the experimental[88] group, they were not significant for the control[89] group. When these data were examined by women's level of literacy class participation, decreases were significant among women with "medium" and "high" levels of literacy class participation but not among those who attained "low" participation levels.[90] The highest percentage point decrease was observed among women in the "high" literacy exposure group, followed by women in the "medium," "low," and "control" groups (8.1, 7.6, 3.4 and 2.2 percentage points, respectively) (see Figure 48). These data suggest that girls' trafficking became a less visible problem among women in the study. We do not know, however, whether this represents a decline in trafficking in those districts or simply a decrease in the number of women acknowledging its existence in their communities.



Year 1 Total n=965 (Control n= 192, "Low" n=262, "Medium" n=315, "High" n=196)
Year 2 Total n=966 (Control n= 194, "Low" n=261, "Medium" n=315, "High" n=196)
Year 3 Total n=967 (Control n= 194, "Low" n=262, "Medium" n=315, "High" n=196)

Figure 48: Percentage of Women Who Had Heard or Witnessed Cases of Girls' Trafficking in the Previous Year

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[88] McNemar's x^2(2, N=773), p=.000.

[89] McNemar's x^2(2, N=192), p=.454.

[90] For "low" levels McNemar's x^2(2, N=262), p=.150; for "medium" levels McNemar's x^2(2, N=315), p=.001; for "high" levels McNemar's x^2(2, N=196), p=. 020.

The number of women who reported taking action against girls' trafficking was too small to be discussed in terms of percentages and to be represented graphically. Table 22 shows the actual number of women at each level of literacy participation who took action against trafficking over a three-year period.

Table 22: Number of Women Who Had Taken Action Against Girls' Trafficking Over Time

Level of Participation	Year 1	Year 2	Year 3
Control	0	1	3
Low	1	3	2
Medium	3	1	6
High	5	2	1

Year 1 Total n=122 (Control n= 17, "Low" n=21, "Medium" n=50, "High" n=34)
Year 2 Total n=117 (Control n= 15, "Low" n=22, "Medium" n=47, "High" n=33)
Year 3 Total n=69 (Control n= 13, "Low" n=12, "Medium" n=26, "High" n=18)

These data are an indication that very little individual or collective action was taken against that type of crime over time. The low incidence of trafficking in those districts compounded by women's resistance to acknowledging the problem of trafficking and to fight trafficking criminals and corrupted local governments are plausible explanations for women's lack of involvement in that type of activity.

5.6.9 Domestic Violence

Wife beating is considered a widespread problem affecting all castes and ethnic groups in Nepal. Therefore, it is not surprising that a large percent of women in all groups in this study had heard of or witnessed cases of wife beating in their area. As shown in Figure 49, over the three-year period, no significant changes occurred in the percent of women who had heard of or witnessed wife beating in the control[91] and experimental[92] group. Similarly, when the data were examined by level of literacy class participation, no significant changes were found.[93]

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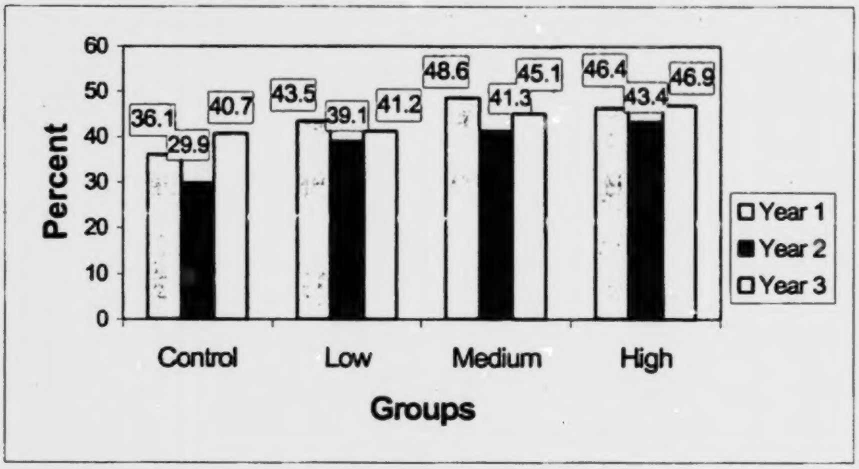
[91] McNemar's $x^2(2, \underline{N}=194), \underline{p}=.380$.

[92] McNemar's $x^2(2, \underline{N}=773), \underline{p}=.393$.

[93] For "low" levels McNemar's $x^2(2, \underline{N}=262), \underline{p}=.617$; for "medium" levels McNemar's $x^2(2, \underline{N}=315), \underline{p}=.375$; for "high" levels McNemar's $x^2(2, \underline{N}=196), \underline{p}=1.000$)

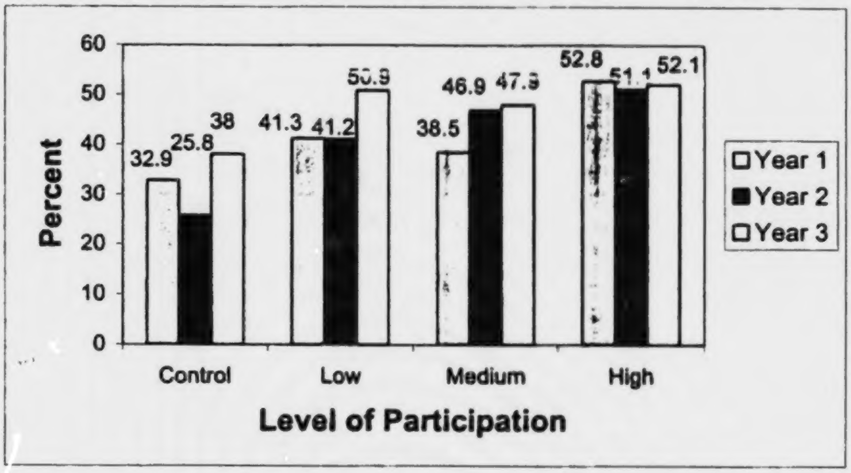


Year 1 Total n=967 (Control n= 194, "Low" n=262, "Medium" n=315, "High" n=196)
Year 2 Total n=966 (Control n= 194, "Low" n=261, "Medium" n=315, "High" n=196)
Year 3 Total n=967 (Control n= 194, "Low" n=262, "Medium" n=315, "High" n=196)

Figure 49: Percentage of Women Who Had Heard or Witnessed Cases of Wife Beating in the Previous Year

In the control group, a modest increase was found in the percent of women who had knowledge of domestic violence (4.6 percentage points), while there was a small decrease over the same period (2.3 and 3.5 percentage points, respectively) among women who had attained "low" and "medium" level of literacy participation. Women in the "high" exposure to literacy group showed a very small percentage point increase in knowledge of violence against women (0.5 percentage point). These data reflect women's continuous resistance in acknowledging the problem of domestic violence in their communities.

Women in the study were also asked to report whether they had taken any individual or collective actions against the practice of wife beating. Figure 50 shows the percent of women who took individual or collective action against wife beating over time.



Year 1 Total n=428 (Control n= 70, "Low" n=114, "Medium" n=153, "High" n=91)
Year 2 Total n=374 (Control n= 58, "Low" n=102, "Medium" n=130, "High" n=84)
Year 3 Total n=421 (Control n= 79, "Low" n=108, "Medium" n=142, "High" n=92)

Figure 50: Percentage of Women Who Had Taken Action Against Wife Beating

Although that type of social action was not uncommon, no significant changes occurred among women in the control[94] or the experimental group[95] over time. Similarly, when the data were examined by level of literacy class participation, no significant changes were found.[96] Women in the control, "low" and "medium" levels of participation groups showed small increases over time (5.1, 9.6, and 9.4 percentage points, respectively). Women in the "high" exposure to literacy group showed a very slight decrease in taking action against domestic violence (0.7 percentage point). These results indicate that women have not become significantly more involved in actions against domestic violence over time. A plausible explanation for their lack of social action on that particular issue is the fact that economic and religious factors still play an important part in women's social actions despite their participation in integrated literacy programs.

Women's dependence on men, as well as the prevalence of poverty, the lack of jobs and alcohol still play a large role in women's inability to fight violence. For the most part, society in Nepal still responds to domestic violence by pressuring women to reconcile with their abusers due to the pervasive view that there is no place for a woman to live outside her family. Furthermore, the Nepali legal system does not provide an effective solution for women subjected to domestic violence. The Nepali government's silence and inaction on this issue discourages women from taking action against their abusers.

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[94] McNemar's x^2(2, N=33), p=.344

[95] Binomial distribution, p=.343

[96] For "low" levels binomial distribution, p=.541; for "medium" levels McNemar's x^2(2, N=84), p=1.000; for "high" levels McNemar's x^2(2, N=51), p=.248)

Table 23 presents mean literacy scores by women's responses to questions intended to measure their participation in community groups, as well as their awareness of and involvement in women's rights issues across the three years. For the most part, women who responded affirmatively to the questions had significantly higher mean literacy scores than those responding negatively in all three years. The only exceptions were for the question regarding knowledge of wife beating in years one and three and action against trafficking in all three years.

Table 23: Mean Literacy Scores by Responses to Community Participation Questions

	Mean Literacy Scores		
Variables	**Year 1 (n=967)**	**Year 2 (n=967)**	**Year 3 (n=967)**
Participated in at least one community group?			
Yes	20.89	23.78	21.66
No	13.54	15.13	14.07
Difference	7.35***	8.65***	7.59***
Participated in community development activities?	21.56	23.43	22.76
Yes	14.28	16.62	15.78
No	7.28***	6.81***	6.98***
Difference			
Heard of girls' trafficking?			
Yes	18.61	25.93	21.67
No	14.36	16.18	16.47
Difference	4.25***	9.75***	5.20**
Heard of wife beating?			
Yes	15.25	20.10	17.31
No	14.58	15.61	16.47
Difference	0.67	4.49***	0.84
Acted against trafficking?			
Yes	16.67	25.71	21.58
No	18.77	25.97	21.68
Difference	2.10	0.26	0.10
Acted against wife beating?			
Yes	16.92	22.59	18.89
No	14.07	18.30	15.89
Difference	2.85**	4.29***	3.00**

***p< .000
**p< .05.

Literacy score differences suggest that a positive relationship exists between women's literacy skills and participation in community group activities, knowledge of girls' trafficking, and action against wife beating. However, since the differences were significant in all three years, including the baseline year, we could not conclude that participation in integrated literacy programs is responsible for these differences.

No consistent relationship was found between reports of wife beating and literacy skills over the three years. Additionally, analysis of literacy score differences revealed no significant relationship between literacy skills and action against trafficking in any of the three years. Action against trafficking is probably related to other factors, such as overall incidence of girls' trafficking in the area and socio-economic status, caste, and district characteristics.

5.6.10 Summary of Community Participation

Women's membership in community groups increased significantly in all groups over the period. The greatest increase occurred among women with high levels of literacy class participation, indicating that integrated literacy programs have an impact on women's participation in community activities. However, it is important to note that women's choices of community groups reflect, to a large extent, the focus of government and NGO-sponsored programs in Nepal. Not surprisingly, most women in the experimental and control group showed higher interest in economic, health, and forest user community groups than in advocacy and women's development groups. In order to increase participation in groups that address violations of women's rights in Nepal it is necessary for programs to better coordinate efforts and include those topics as a central part of their curriculum.

In addition to expanding the topics discussed in integrated literacy programs, the GWE-PRA findings suggest that programs must address the causes for lack of participation. Women in the experimental and control group revealed that the most common reasons for not participating were "lack of time," "no group in the area" and "lack of interest." Local government and NGOs must improve the dissemination of information about the importance of women's groups in order to increase women's interest in participation and alter husbands' perceptions of those groups. The high percent of women in both groups who mentioned that no community groups existed in their area is an indication that more opportunities must be created for women to participate in community group activities.

Women's membership in community development activities increased significantly in all groups over time. The highest percentage-point increase occurred among women in the control group, which led us to conclude that participation in the integrated literacy programs is not responsible for women's increased participation in those groups. It is important to note that community development activities were not the focus of any of the integrated literacy programs in this study.

Likewise, themes such as wife beating and girls' trafficking were not discussed in great depth by BPEP or HEAL. The data suggest that girls' trafficking became a less visible problem among women in those programs. However, we do not know whether this represents a decline in trafficking in those districts or simply a decrease in the number of women acknowledging the problem.

5.7 Children's Education

5.7.1 Status of Children's Education in Nepal

About 63% of school age children in Nepal are enrolled in school. Boys' enrollment rate (80%) is much higher than that of girls' (46%) (UNESCO, 1998a). Prior studies in Nepal have identified several reasons why families do not send their children to school, including: 1) the work burden a family places on the children, 2) the lack of financial resources and 3) parental attitudes toward children's education, especially for girls.

Nepali children, in general, and girls in particular, are expected to help with household chores. Many children are also involved in wage-earning activities. Not surprisingly, involvement in household and income-earning activities is negatively correlated with school attendance. An earlier study found that more than 90% of the children who were engaged in income-earning activities did not go to school (CERID, 1984). A more recent study, which included both surveys and focus group discussions, identified two main reasons why parents were not sending their children (age 6-10) to school. They found that parents were either too poor to pay registration and other fees or their children were needed to do household chores. The number of girls who were kept out of school because of household chores was higher than the number of boys (*NMIS*, 1996).

Another factor inhibiting children from going to school in Nepal is parental attitudes toward education. It is traditionally believed that only sons are responsible for supporting their parents in old age. Therefore, it is commonly thought that sons, but not daughters, should be provided with the skills and resources for undertaking this responsibility. Sons are, hence, expected to be supported in their endeavors to study, set up business and become independent. In many traditional households, girls are expected to be dependent on their male relatives before marriage and upon their husbands after marriage. Hence, any investment in girls' education by the natal family, who cannot utilize the benefits accruing from it, is considered impractical. In addition, an increasing number of girls are being trafficked and forced into prostitution. Trafficked girls are unlikely to be sent to school or become literate. Those who return from the brothels are often infected with HIV/AIDS and ostracized from society, which makes it difficult for them to gain access to schooling or out-of-school programs (Hannum, 1997).

Two major studies examining the status of women in Nepal have shed light on parental attitudes toward sending girls to school. The first was *The Status of Women in Nepal (SOWN)* by Acharya and Bennett, 1981. The second study, *Women's Development and Democracy (WDD)* (Shtrii Shakti, 1995), examined changes in women's status in Nepal from 1981 to 1993. Both of these studies asked the question, "Should girls go to school?" They also examined reasons given by those who responded negatively. The 1981

Acharya and Bennett study found that 29% of respondents felt girls should not go to school, mainly because they were needed to work. A much smaller percentage of respondents reported that education for girls was not a good investment since, after girls were married, they would leave and, thus, not benefit the household. Any Hindu, rich or poor, who ignores these customary sanctions runs the risk of invoking the anger of the gods and goddesses, as well as criticism from the community (Berreman, 1975, Acharya and Bennett; 1981, Acharya, 1997).

In the 1995 Shtrii Shakti study, only 9% of respondents expressed the view that girls should not go to school. Of those who felt that it was not worth sending girls to school, the most frequently stated reason was that it is difficult to find husbands for highly educated girls. The *Nepal Multiple Indicator Surveillance* (*NMIS)* study (1996) reported that, in general, parents value education for their children, and they "have good intentions about sending their children to school." However, this study found that parental attitudes regarding school participation were often different for sons and daughters, with some parents believing education for girls is not worthwhile, is inappropriate or is even harmful (with respect to marriage prospects).

5.7.2 Parental Involvement in Children's Education

One study in Nepal showed that children who do not receive help at home with their studies are more likely to repeat a grade or drop out of school (*NMIS*, 1996). This same study reported teachers' views about how to lower class repetition and dropout rates. The two most frequent suggestions were to educate parents through nonformal education and to get parents to help their children study at home (the latter being influenced by the former). Furthermore, study results suggest that "literacy programs (and other developmental programs) aimed at modifying the attitude of rural adults have a salutary effect on rural children's participation in education" (CERID, 1984, p. 48).

The *NMIS* study also found that school dropout and class repetition rates were negatively correlated with the amount of help a child receives at home on his or her studies. However, this study did not examine whether or not those students whose parents were literate were receiving more help at home. A retrospective study conducted by Save the Children/US found that while both literate (participants in Save the Children/US literacy program) and illiterate women valued their children's education, literate women reported more involvement in their children's school activities. This included discussions about school progress with children and meeting with children's teachers (Save the Children/US, 1997).

The majority of the existing information regarding the effects of women's literacy programs on children's schooling comes from program evaluation reports produced by international agencies for the purposes of evaluating their own literacy programs (Robinson-Pant, 1994). These project evaluation reports are informative, but as Robinson-Pant has observed, "until recent years, there has been a tendency to be protective about project information, [and] to be positive rather than negative in public"[97]

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[97] Robinson-Pant does, however, say that in recent years the atmosphere surrounding literacy projects is more open.

(1994, p. 2). It should be remembered that these are generally evaluation reports for donors, written by organizations themselves about their own literacy programs.

5.7.3 Measures of Women's Attitudes Toward and Involvement in Children's Education

The following research questions were addressed in this section:

1. Did women's attitudes toward children's education significantly change from Year 1 to Year 3?
2. Did women's involvement in their children's education significantly change from Year 1 to Year 3?
3. To what extent did women's participation in the literacy classes contribute to improvements in women's attitudes toward and involvement in children's education during the three-year period?

5.7.4 Women's Attitudes Toward Children's Education

When women were asked general questions concerning whether they thought boys and girls should go to school, in all three years, almost everyone in both the experimental and the control group said that both boys and girls should go to school. Percentages of women saying "yes" to this question ranged from 99% to 100% during the period. However, when women were asked the level to which girls and boys should go in school, women in both groups responded differently for girls than for boys (see Tables 24 and 25).

Table 24: To What Level Should Girls Go in School

	Year 1 %	Year 2 %	Year 3 %	% Pt. Change Year 1-2	% Pt. Change Year 1-3
Experimental Group					
Primary	5.6	5.2	7.1	-0.4	1.5
Secondary	19.0	18.4	21.2	-0.6	2.2
SLC or higher	75.4	71.6	71.4	-3.8	-4.0
Control Group					
Primary	7.3	7.7	11.9	0.4	4.6
Secondary	30.7	31.4	28.5	0.7	-2.2
SLC or higher	62.0	60.9	59.6	-1.1	-2.4

Table 25: To What Level Should Boys Go in School

	Year 1 %	Year 2 %	Year 3 %	% Pt. Change Year 1-2	% Pt. Change Year 1-3
Experimental Group					
Primary	1.4	0.4	1.7	-1.0	0.3
Secondary	6.9	5.3	7.8	-1.6	0.9
SLC or higher	91.7	94.3	90.6	2.6	-1.1
Control Group					
Primary	2.6	1.5	3.1	-1.1	0.5
Secondary	7.2	11.3	13.4	4.1	6.2
SLC or higher	90.2	87.1	83.5	-3.1	-6.7

The proportion of women who thought boys or girls should attain a Secondary Leaving Certificate (SLC) level of education declined slightly over the period. At the beginning of the study in Year 1, 91.7% of women in the experimental group and 90.2% in the control group thought boys should continue on to SLC level or higher. By comparison 75.4% and 62.0% of the women in the experimental and control group, respectively, believed that girls should go to that level.

The proportion of women who thought *either girls or boys* should go to SLC level or higher decreased during the three-year period in both the experimental and the control group. The proportion who thought *boys* should go to *secondary* level increased in both groups by 0.9 and 6.2 percentage points, respectively. Similarly, the proportion of women in the experimental who thought *girls* should go to *secondary* level increased by about 2.2 percentage points in the experimental group and decreased by 2.2 percentage points in the control group. These changes probably reflect the downturn in the economy, as well as deteriorating political stability occurring during those years.

5.7.5 Women's Help with Children's Homework

Each year, over the three years, women who had children in school were asked whether or not they helped their children with their homework. Those who said "yes" were also asked what type of help they provided. The number of women reporting that they helped their children with their homework significantly[98] increased from Year 1 to Year 3 for both the experimental group and the control group. These increases were significant[99] for women at all levels of literacy class participation.

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[98] For the Control Group McNemar's x^2=(2, N=121), p=.000, for the Experimental Group, McNemar's x^2=(2, N=456), p=.000

[99] For "Low" level McNemar's x^2=(2, N=143), p =.000; for "Medium" level McNemar's x^2=(2, N =178), p =.000; for "High" level McNemar's x^2=(2, N =135), p=.000.

However, as shown in Table 26 and 27, the type of assistance that women provided was mainly in the form of attempting to convince their children to read through encouragement or coercion or by providing financial support, such as buying stationery or paying for private tutoring.

Table 26: Experimental Group Type of Help Provided

	Year 1 Total N=163[a]	Year 2 Total N=381[a]	Year 3 Total N=450[a]
Assistance Provided	n[b]	n[b]	n[b]
Teach to read or write lesson	21	36	45
Convince to read (yelling/beating)	15	165	188
Tell to read/do homework	76	363	421
Help with household chores	57	111	111
Buy stationery	2	119	112
Pay for private tutoring	7	21	36
Watch studying	9	41	40

[a] Total number of women who reported providing help with homework.
[b] Respondents could provide more than one response.

Table 27: Control Group Type of Help Provided

	Year 1 Total N=29[a]	Year 2 Total N =7 4[a]	Year 3 Total N=105[a]
	n[b]	n[b]	n[b]
Teach to read or write lesson	0	0	0
Convince to read (yelling/beating)	4	29	39
Tell to read/do homework	15	73	96
Help with household chores	13	15	18
Buy stationery	0	19	25
Pay for private tutoring	4	2	4
Watch studying	0	5	7

[a] Total number of women who reported providing help with homework.
[b] Respondents could provide more than one answer.

Few women were able to provide actual assistance with writing their lessons. None of the women in the control group who helped their children with homework provided assistance in reading or writing their lessons. In comparison, the number[100] of women in the experimental group who helped with writing lessons more than doubled from 21 in Year 1 to 45 in Year 3. The greatest increases over the three years were in the number of women who either told their children to read and study or tried to convince them by "yelling at them" and/or "beating them." Among women in the control group, the number of women who reported buying stationery or paying for private tutoring for their children also increased.

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[100] Because the total "n" for Year 1 control group is less than 30, percentages would have little meaning. Consequently, to enable comparisons of experimental and control group results, numbers, rather than percentages are presented in both Tables 26 and 27.

Of those who were not helping their children with their homework[101]. the most frequently mentioned reason was "illiteracy." The proportion of women citing "illiteracy" as their reason for not helping declined over the period for both groups. About 97.1%, 98.2% and 86.5% of the women in the control group in years one, two and three, respectively, mentioned this as the reason for not helping. In the experimental group, 87.5%, 75.0% and 75.5% in Years 1, 2 and 3, respectively, gave "illiteracy" as a reason. The decrease in the proportion of women in the control group who cited "illiteracy" as their reason for not assisting their children with homework provides further evidence that some of the control group women were participating in literacy training or tutoring that was not reported. A small number of women in both groups mentioned "difficulty in understanding the homework," "lack of time" and "lack of interest by their children" in receiving help as reasons for not assisting their children with their homework.

5.7.6 Willingness/Ability to Talk to Children About School Activities or Studies

Women who had children in school were asked whether or not they talked to their children about their school activities or their studies. The proportion of women who discussed their children's education with them increased significantly[102] over the period for both the experimental and the control group. The proportion of women in the control group who talked to their children about their education increased from 54.2% in Year 1 to 74.6% in Year 2. By comparison, 65.5% of the women in the experimental group discussed their children's education with them in Year 1 and 82.7% in Year 3. Increases were significant[103] for women at all levels of literacy class participation.

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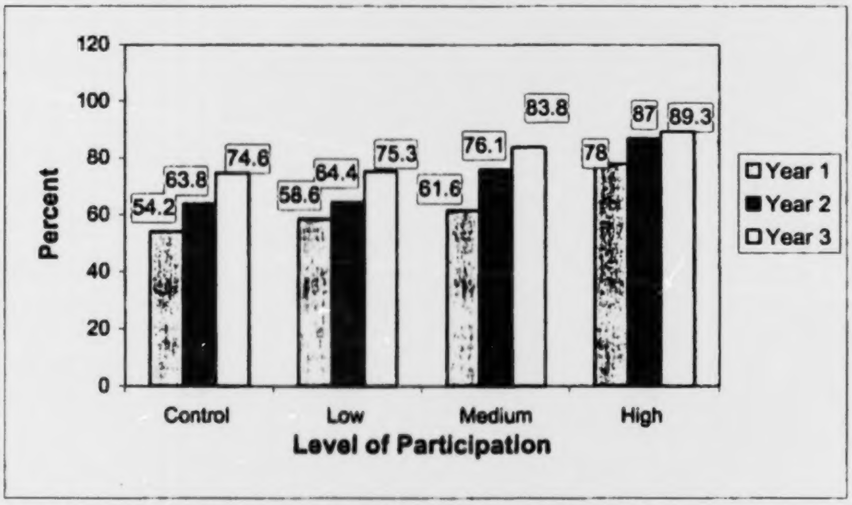
[101] For the experimental group, Year 1 n=312, Year 2 n=136 and Year 3 n =94; for the control group, Year 1 n=102, Year 2 n=55 and Year 3 n =37.

[102] For the Control Group McNemar's $x^2=(2, \underline{N}=120)$, $\underline{p}=.004$, for the Experimental Group, McNemar's $x^2=(2, \underline{N}=453)$, $\underline{p}=.000$.

[103] For "Low" level McNemar's $x^2=(2, \underline{N}=143)$, $\underline{p}=.002$; for "Medium" level McNemar's $x^2=(2, \underline{N}=175)$, $\underline{p}=.000$; for "High" level McNemar's $x^2=(2, \underline{N}=135)$, $\underline{p}=.017$.

Figure 51 shows the proportion of women who talked with their children about their homework by women's level of literacy class participation. Hence, it is not possible to determine whether it was the literacy classes or other factors that were largely responsible for these increases.



Year 1 Total n=609 (Control n= 131, "Low" n=152, "Medium" n=185, "High" n=141)
Year 2 Total n=649 (Control n= 130, "Low" n=160, "Medium" n=205, "High" n=154)
Year 3 Total n=421 (Control n= 142, "Low" n=170, "Medium" n=210, "High" n=159

Figure 51: Proportion of Women with Children in School Who Talked with Their Children about Their School Activities and Their Studies

5.7.7 Summary of Children's Education

This section describes the results of several questions aimed at assessing changes in women's attitudes about and involvement in their children's education. From the beginning of the study in Year 1 to the final year (Year 3), almost everyone interviewed professed to consider education important for both boys and girls. Almost all respondents said that both boys and girls should go to school. However, the level to which women thought that their children should go in school was higher for boys than for girls. This was true for women in both the experimental group and the control group.

Nevertheless, women's aspirations for their children's education (both boys and girls) declined during the period. This decrease is most likely related to deteriorating economic and political conditions occurring throughout the country at the time. By Year 3, 7.1% of women in the experimental group and 11.9% in the control group thought that girls should go no higher than primary school. This represents an increase of 1.5 percentage points from Year 1 for women in the experimental group and 4.6 percentage points for women in the control group who thought that girls should only attend school through the primary level.

The proportion of women who professed to help their children with their homework significantly increased during the period. However, the type of assistance provided was mainly in the form of efforts to convince their children to read by using encouragement or coercion or by providing financial support, such as buying stationery or paying for private tutoring. The number of women who were able to actually help their children with their lessons was very small. None of the women in the control group and only 21 women (about 3% of the total experimental group) reported providing this type of assistance in Year 1. By Year 3, the number remained the same in the control group but more than doubled in the experimental group (to 45 women or about 6% of the total sample).

The proportion of women who discussed their children's education with them increased significantly over the period for both the control group and the experimental group (with significant increases for women at all levels of literacy class participation). Consequently, it is not possible to determine whether it was the literacy classes or other factors that were largely responsible for these increases.

We concluded that for the literacy classes to have a significant impact on children's education, especially girls, these programs need to incorporate specific materials into the curriculum focusing on the importance of children's education, as well as on ways in which women can become more involved with their children's education. This is particularly important during periods of economic and political instability, when parents are tempted to pull girls out of school to help with household chores or with income-earning activities. Additionally, the literacy programs could be strengthened by linking them directly with the formal schools and involving literacy class participants in Parent Teacher Associations or multi-generational programs.

5.8 Overall Measure of Social and Economic Development

Across the short span of three years (1998-2000), many positive changes were noted in women's awareness of and behavior in health and reproductive health, economic participation, political awareness, and community activities. This section presents findings that demonstrate the overall impact of integrated literacy and basic education programs in Nepal on women's social and economic development. This discussion addresses the question: do the integrated literacy and basic education programs in Nepal have a significant effect on the participants' social and economic development, after controlling for women's characteristics, household SES, and unknown factors over time? Although the long-term, cascade, and other multi-level effects were not immediately assessable, this multi-year analysis with an experimental design helped explain the intermediate effects of the programs on women's social and economic development after considering other factors.

The first step in this analysis, was to develop a 35-point index to measure the outcome construct, women's social and economic development. The index was compiled by applying a series of "sensitivity analyses" of testing variables' contribution to the *alpha* level of the overall measure of the outcome. Four specific areas of indicators were selected for the index: 1) income-earning activities, 2) women's health and reproductive health, 3) political participation, and 4) community participation.

The charts in Figure 52 show how the sampled women are "plotted" along the index, based on their scores over three years. Clearly, the distributions are relatively "normal," revealing that the index is a reliable measure of the sample. In addition, the averages in the index score over three years have improved steadily. We must note that these averages represent overall growth over time and do not tell us which types of women are more or less likely to demonstrate "gains" on the index.

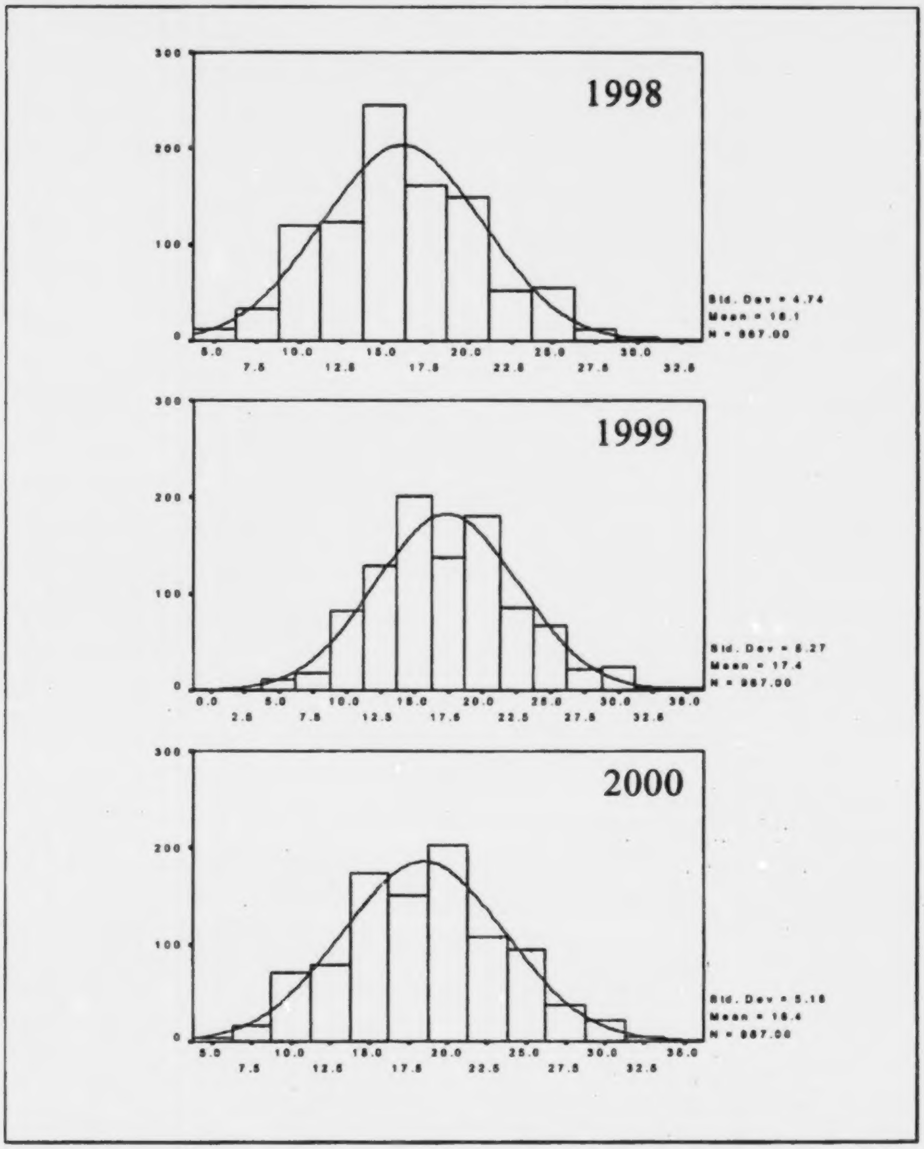


Figure 52: Distribution of Index Scores

The next step involved constructing a multivariate model to determine whether the integrated literacy and basic education programs had a significant impact on women's social and economic development, taking into consideration the effects of other factors, such as women's household SES, age, and time factors. This model is represented by the following:

$$S=a+b_1X_1+b_2X_2+b_3X_3+b_4X_4+b_5X_5+e$$

S, Index of Social and Economic Development
a, Intercept (or constant)
b_n, Coefficients (or slopes) associated with X_n
X_n, Factors that may explain a portion of the variance of S
e, A leftover portion of the variance of S that can not be explained by X_n in the model.

We selected five key factors (Xs) for the regression model:

1. Group (experimental and control);
2. Year 1 Completion (whether or not the participants completed the basic literacy class in Year 1);
3. Home SES score (composite of household material possession);
4. Age cohort (15-25, 26-35, 36-45 and older); and
5. Time/years (measure of unknown factors as time goes by).

The most critical factors for this model were the "group" and "completer" variables, which indicate the effect of the integrated literacy and basic education programs in the context of several other factors that are often known to affect the outcome (see Table 28). We should also explain that three variables included in Bolivia analysis were not included in Nepal analysis, education level, marital status, and urban/rural location. The women's education level was not included because there was little variation in women's educational status. All women in the sample were married, as intended in the sample design. All women in the sample were selected from rural regions.

Table 28: Factors That Explain the Overall Index of Social and Economic Development

	Slope coefficient	s.e.	t-statistics	p-value
Constant value (or intercept)	7.28	0.37	19.85	0.000
Group (experimental=1 and control=0)	1.99	0.22	9.19	0.000
Completer (yes=1, no=0)	2.61	0.19	14.05	0.000
Age cohorts (1, 2 and 3)	0.86	0.11	7.76	0.000
Material possession score (SES) (0-13)	0.65	0.04	17.14	0.000
Time/years (0=baseline, 1=year2; 2=year3)	1.11	0.10	11.18	0.000
R-square	0.55			
F-statistics	244.50			
p-value (model)	0.000			

In the above explanatory model, 55% of the total variance (R-square statistics=0.55) in the social and economic development index was "explained" by the five factors in the model. Each factor in the model significantly contributed to explain the outcome, controlling for other factors (all p-values=0). Results from this model allowed us to conclude that, within three years (1998-2000), women who participated in the integrated literacy and basic education programs made significantly more progress in the index of social and economic development than women who did not participate in these programs, even when we controlled for other significant factors (effects) such as age, household material possession (SES) score, and time/year.

On average, considering all other significant factors, a woman who participates in and completes one of the two programs (HEAL or BPEP) is estimated to gain 13 percentage points more in the index of women's social and economic development than a woman who does not participate. Even a woman who is likely to drop out later is estimated to gain 5.7 percentage points more than a woman who did not participate at all.

In Figure 53, we can see that a woman (a typical profile in our sample) who is non-participant, between age 15 and 25, with an average SES (5.5 out of 13 point-scale) in the baseline year would, on average, reach 33.5% on the standardized index (0-100). She would move up by 3 percentage points each year. It is clear that all women will likely improve their social and economic circumstances every year, regardless of whether they are enrolled in integrated literacy and basic education programs.

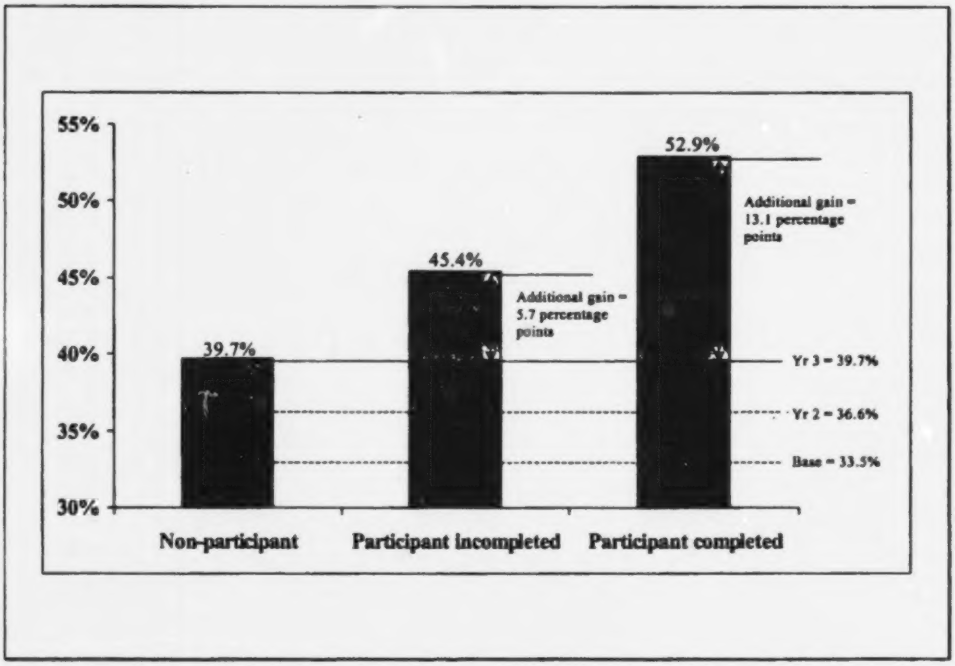


Figure 53: Profile of a Typical Woman in the Study

However, holding constant all other factors in our model such as women's age, home material possessions (SES), and time/year, we found that the estimated average difference between the experimental and the control group in the index of social and economic development was 5.7 percentage points. If a woman participates in the integrated literacy program and completes it, she is expected to obtain 13.1 percentage points more, on average, on the social and economic measure than a woman who does not participate in the program at all during the three-year period. This graph highlights the net effect of the integrated literacy and basic education programs on social and economic development within the 1998-2000 period, even after considering may other key factors equally.

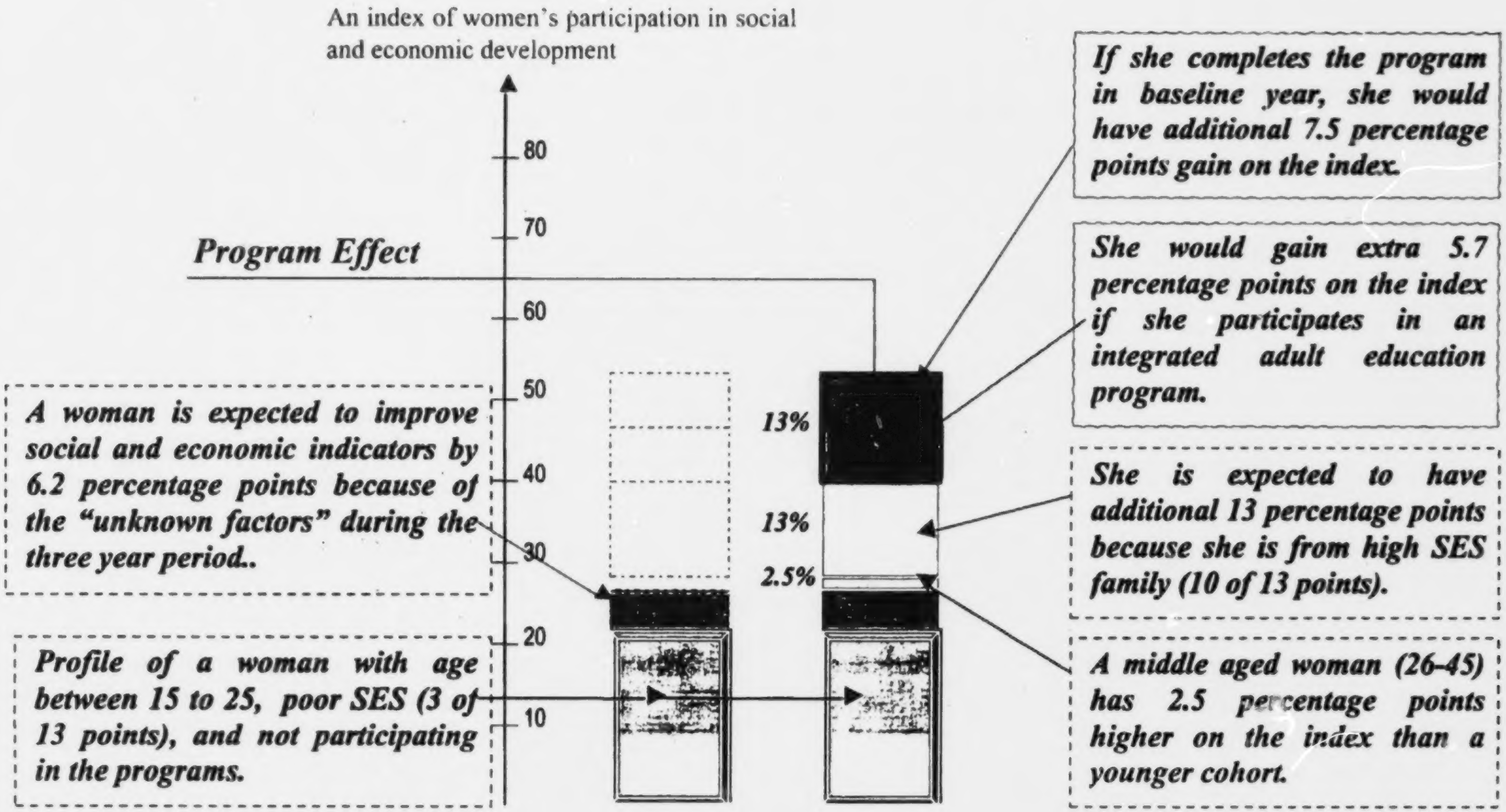
In summary, the results clearly confirmed that women who participated in the integrated literacy and basic education programs in Nepal showed a larger improvement in their index score than women who did not participate in the programs. The net gain (13 percentage points) of the participants over non-participants, considering all other things equally, indicates a significant investment return and would translate into other positive effects on children's education, local economy, and social capital for the country. Hence, we recommend continuing support for such programs.

Figure 54 illustrates the cumulative effect of the integrated literacy and basic education programs on an individual woman, taking other factors into account. The leftmost column depicts the individual contribution of a woman's age, and SES, irrespective of her participation in an integrated literacy and basic education program to the composite measure of social and economic development. The rightmost column depicts the added effect contributed by a woman's participation in one of the NGO programs examined in the study.

5.9 Program Cost

What is the cost of achieving this 13-point gain in the social and economic index? It is estimated that it costs $500 to train 28 women (classes range from 25-30 women) for 580 hours in Nepal (6 months basic plus 3 months post). This amounts to $24 to train 28 women for one hour (or about $0.03 per person per hour). It includes facilitator salary, per diem, basic material costs, basic transportation, management & support staff, and maintenance and utility costs. To train 20,000 women for 580 hours of instructional time, it would cost about $357,142. Thus, fairly large gains in social and economic development can be attained by investing a relatively small amount of money.

Effect of Integrated Literacy and Basic Education Programs on Women's Participation in Social and Economic Development in Nepal



A woman is expected to improve social and economic indicators by 6.2 percentage points because of the "unknown factors" during the three year period..

Profile of a woman with age between 15 to 25, poor SES (3 of 13 points), and not participating in the programs.

If she completes the program in baseline year, she would have additional 7.5 percentage points gain on the index.

She would gain extra 5.7 percentage points on the index if she participates in an integrated adult education program.

She is expected to have additional 13 percentage points because she is from high SES family (10 of 13 points).

A middle aged woman (26-45) has 2.5 percentage points higher on the index than a younger cohort.

Figure 54: Program Effect of on a Typical Woman in the Sample

6. SUMMARY AND CONCLUSIONS

This study examined factors contributing to women's persistence in literacy programs and tested three hypotheses concerning the impact of integrated literacy programs on development. These hypotheses focused on respondents' awareness (knowledge and attitudes) and behavior (practice and skills).

1. Women who participate in women's integrated literacy programs *are more aware* of health and reproductive health issues, political affairs and the importance of children's education than they were prior to participating in the program and in comparison to women who do not participate in the programs.

2. Women who participate in integrated literacy programs *are more likely to participate* in income-earning activities, political elections, school activities and community activities than they were prior to participating in the programs and in comparison to women who do not participate in the programs.

3. Women who participate in women's integrated literacy programs have greater literacy skills than they did prior to participating in the programs and in comparison to women who do not participate in the programs.

6.1 Persistence in BPEP and HEAL Programs

Several factors contributing to women's persistence in the BPEP and HEAL programs were examined. More specifically, the research attempted to determine the extent to which persistence in literacy classes differed by: 1) program, 2) previous literacy classes, 3) age, 4) language spoken at home, 5) socio-economic status, and 6) district.

Women in the HEAL program had significantly higher levels of literacy class participation than women in BPEP. Their program affiliation explained about 7.4% of the variance in the level of literacy class participation. An additional 3.4% of the variation was explained by SES, language and previous literacy class participation. However, additional research is needed to identify other factors responsible for women's persistence in the programs.

The age of respondents and their persistence in the program were related. Regression analysis revealed for each increase of one year in participants' age at baseline, we can expect an increase of .02 units in the literacy class participation ratio. This represents an increase of about five to nine hours in the basic-literacy class (depending on whether participants were in the HEAL or BPEP program) or from three to six hours in the post-literacy class.

6.2 Overall Social and Economic Development

A 35-point index was constructed to measure the outcome construct, women's social and economic development. The index was compiled by applying a series of "sensitivity analyses" of testing variables' contribution to the *alpha* level of the overall measure of the outcome. Four specific areas of indicators were selected for the index: 1) income-earning activities, 2) women's health and reproductive health, 3) political participation, and 4) community participation. Additionally, a multivariate model was constructed to determine whether the integrated literacy and basic education programs had a significant impact on women's social and economic development taking into consideration the effects of other factors, such as women's household SES, age, and time factors.

Analysis of the model revealed that, on average, considering all other significant factors, a woman who participates in and completes one of the two programs (HEAL or BPEP) is estimated to gain 13 percentage points more in the index of women's social and economic development than a woman who does not participate. Even a woman who is likely to drop out later is estimated to gain 5.7 percentage points more than a woman who did not participate at all.

In summary, the results clearly confirmed that women who participated in the integrated literacy and basic education programs in Nepal showed a larger improvement in their index score than women who did not participate in the programs. The net gain (13 percentage points) of the participants over non-participants, considering all other things equally, indicates a significant investment return and would translate into other positive effects on children's education, local economy, and social capital for the country. **Hence, we recommend continuing support for such programs.**

6.3 Hypothesis 1

6.3.1 Health and Reproductive Health Knowledge and Awareness

Findings indicated that the knowledge and awareness of women who participated in the integrated literacy classes significantly increased from Year 1 to Year 3 on a number of important health-related issues. On the other hand, no significant increases were found among women in the control group who were not participating in such classes. Women's knowledge of family planning, their knowledge of reasons for using family planning methods, and their understanding of HIV/AIDS prevention, as well as their awareness of STIs, significantly increased for the experimental group but not for the control group over the period.

Additionally, an examination of a composite variable that included several measures of women's health knowledge revealed that a significant relationship exists between increases in women's awareness of health knowledge issues and the length of their participation in the literacy programs. However, the extent of their literacy class exposure explained only a small proportion of the variation in responses, indicating that other factors also contribute to these changes as well.

Indeed, on some of the questions, (knowledge of sources of vitamin A, awareness of ways of delaying pregnancy and awareness of HIV/AIDS) significant increases were observed for both the experimental group and the control group. Thus, we concluded that while HEAL and BPEP programs are having a significant impact on several aspects of women's health awareness and knowledge, the myriad radio broadcasts and health-related programs in these communities are also having an impact. The combination of the HEAL and BPEP classes, in conjunction with other interventions in the community has significantly improved women's awareness and knowledge of health-related issues.

6.3.2 Political Knowledge and Attitudes

In light of recent government initiatives to involve a greater number of women in the political process, several questions were included in the GWE-PRA study to examine women's knowledge, attitudes and practices regarding political participation. However, for more than a decade, the political climate in Nepal has been characterized by political infighting, resulting in violent conflict and political assassination. During the period that this study was carried out, the political situation was very unstable, and it continued to worsen in the months following the completion of data collection.

Five questions were asked to assess women's political knowledge. Women were asked if they knew: 1) about the national policy requiring that female representative be elected to represent each ward, 2) the minimum age for voting, 3) the name of their VDC, 4) the name of the VDC chairperson and 5) the name of the MP. Of these questions, only the one assessing women's knowledge of the VDC chairperson clearly showed an impact from women's participation in the literacy classes on women's political knowledge. The proportion of women in the experimental group who could provide the name of the VDC chairperson increased significantly from Year 1 to Year 3, but no significant increase was observed among women in the control group.

Largely because of political campaigns and media efforts over the past few years, many of the women in the study (84.1%) already knew about the policy for electing female representatives in each ward, and no significant changes in the proportion who were aware of this policy occurred during the period. However, few women knew the legal voting age, and no significant changes occurred over the period for either the experimental group or the control group in the proportion of women who knew the voting age. It is likely that the confusion concerning the legal voting age is related to the difficulties that women in the study had, in general, with calculating ages. In all three years, women in the experimental group (across all levels of literacy class participation) had a higher knowledge of the voting age than women in the control group, and women who attained "high" levels of literacy class participation demonstrated the greatest knowledge.

Women's attitudes toward politics were gauged by asking two questions: 1) Do you think it is possible for you to become a local representative of your ward? and 2) Are you interested in becoming a local representative of your ward? As one might expect, given the present political climate, women's optimism about their prospects for becoming an elected representative, as well as their interest in doing so, declined during the period. Every year during the three years, fewer women thought it possible to become a local representative, and even fewer women reported they were interested in becoming one. This is probably related to the overall instability of the political situation in Nepal during the period and may reflect larger trends throughout the country. Decreases were statistically significant for the experimental group but not for the control group. Among the most prominent reasons cited for their lack of interest were "illiteracy," followed by "lack of skills and ability," and "social problems," "no use," "no money," "husband does not allow," and "health problems."

Decreases in interest in serving as a representative were greatest among women who attained the highest levels of literacy class. This may be because women who remained in the literacy classes for longer periods had greater access to information and more opportunities to discuss current events. Hence, this could be an indication that these women were simply better informed about the current political situation, and thus, more realistic about their own opportunities to participate or the desirability of becoming involved in politics in light of the current situation. Additionally, interest in serving as a representative varied considerably from district to district, with women in Dhanusha and Jhapa Districts showing the greatest interest. However interest decreased among women in both districts over the period. The only district in which interest in serving as an elected representative increased was the Banke District. Even though women's interest increased slightly in this district in Year 3, it still lagged behind that expressed by women in several of the other districts.

We concluded that, in the face of Nepal's current political instability, the literacy classes had little impact on women's political knowledge or interest in political participation. However, fostering political participation is not an objective of either BPEP or HEAL, and none of the topics in their curricula address political issues. **We do not suggest that these programs add such content to their curricula at this time, as it might discourage women from participating altogether and would take time away from the main focus of the programs.**

6.3.3 Attitudes Toward Children's Education

Almost all women in the GWE-PRA study considered education important for both boys and girls. However, women in both the experimental group and the control group thought boys should attain higher levels of education than girls. For example, in Year 1, 75.4% of the women in the experimental group and 62% of those in the control group stated that girls should go to SLC level or above. By comparison, 91.7% of experimental group women and 90.2% of control group women thought boys should continue in school to that level.

Amidst deteriorating economic and political conditions, women's aspirations for their children's education (both boys and girls) declined slightly during the period. Women were asked each year the level to which their children should attend in school. For some of these women, the level cited in Year 3 was lower than the level they had indicated in Year 1. By Year 3, 11.9% of women in the experimental group and 7.1% in the control group thought that girls should go no higher than primary school. This represents an increase of 1.5 percentage points from Year 1 for women in the experimental group and 4.6 percentage points for women in the control group who thought that girls should only attend school through the primary level.

For the literacy classes to have a significant impact on children's education, especially girls, these programs need to incorporate specific materials into the curriculum focusing on the importance of children's education, as well as on ways in which women can become more involved with their children's education. This is particularly important during periods of economic and political instability, when parents are tempted to pull girls out of school to help with household chores or with income-earning activities. Additionally, the literacy programs could be strengthened by linking them directly with the formal schools and involving literacy class participants in Parent Teacher Associations or multi-generational programs.

6.4 Hypothesis 2

6.4.1 Participation in Income-Earning Activities

The proportion of women who were participating in an income-earning activity increased significantly for women in the experimental group (from 40.1% to 59.9%) and the control group (from 36.6% to 59.8%) during the period. Additionally, significant increases occurred across all levels of literacy class participation. The greatest increase occurred among women with "high" levels of literacy class participation (i.e., those who completed not only the HEAL or BPEP basic-literacy program but also participated in additional basic or post-literacy classes offered by these programs in years two and three). Increases in income-earning activities among women in the experimental group who had "low" levels of literacy class participation (those who completed less than half of a basic-literacy program during the three-year period) were not significant.

The most frequently mentioned income-earning activity in which women were involved was agriculture. About half to three-quarters of the women who were participating in an income-earning activity said that they had started the activity themselves, and 25-40% indicated that the activity had been started by their husbands or other family members. Few women (about 6%) received training in how to carry out their income-earning activities. While most of the women aspired to expand their activities (70-85%), a much smaller proportion (about 17% or less) actually did so during the period.

Other factors, including age and language spoken at home were also examined in relation to women's participation in income-earning activities. In general, the women who were most actively involved in income-earning activities were those who had the highest levels of literacy class participation, were 25-44 years old and spoke Nepali at home. The greatest *increases* in involvement in income-earning activities over the period were among women who were age 15 to 24, who spoke Nepali at home and who had "high" levels of literacy class participation.

The proportion of women in the experimental group who took out individual loans was significantly higher in Year 3 (30.1%) than in Year 1 (16.7%). However, the increase in the proportion of women in the control group who received loans was not significant, with 14.4% percent receiving loans in Year 1 compared with 17.5% in Year 3. When women's level of literacy class participation was taken into account, increases in the proportion of women taking loans were significant for women attaining "medium" and "high" levels of literacy class participation but not for women who attained a "low" level. However, of the women who received loans, only about 50.9%, 45.0% and 39.7% in years one, two and three, respectively reported that they used the money to start or expand an income-earning activity. Other uses for the loans included buying land or houses, paying for children's weddings, agricultural input such as fertilizers, tools, and seeds, daily household expenses, and medical expenses. About 3.2%, 4.8% and 2.6% of the women in years one, two and three, respectively, took loans to pay money lenders for previous loans.

The proportion of women who had savings did not increase significantly from Year 1 to Year 3 for either the experimental group or the control group.

From these findings we concluded that participation in the integrated literacy programs does have an impact on women's economic participation. However, as noted earlier, the focus on skills leading to economic empowerment is minimal in the HEAL and BPEP programs. While the increase in participation in income-earning activities may be related to the increased skills, knowledge and confidence gained by participating in the literacy classes, **a much greater impact could be realized by either strengthening this portion of the respective programs or by channeling participants who have completed these programs into programs such as WEEL, which are specifically targeted to increasing women's economic empowerment.**

6.4.2 Participation in Children's Education

The proportion of women who reported helping their children with their homework significantly increased during the period. The proportion of women in the control group who talked to their children about their education increased from 54.2% in Year 1 to 74.6% in Year 3. By comparison, 65.5% of the women in the experimental group discussed their children's education with them in Year 1 and 82.7% in Year 3. However, few of these women actually provided assistance with their children's lessons. None of the women in the control group and only 21 women (about 3% of the total experimental group) reported providing this type of assistance in Year 1. By Year 3, the number remained the same in the control group but more than doubled in the experimental group (to 45 women or about 6% of the total sample). The assistance they provided was mainly through other types of support, such as convincing their children to read by using encouragement or coercion or by buying stationery or paying for private tutoring.

The proportion of women who discussed their children's education with them increased significantly over the period for both the control group and the experimental group (with significant increases for women at all levels of literacy class participation). Consequently, it is not possible to determine whether it was the literacy classes or other factors that were largely responsible for these increases.

We concluded that for the literacy classes to have a significant impact on children's education, especially girls, these programs need to incorporate specific materials into the curriculum focusing on the importance of children's education, as well as on ways in which women can become more involved with their children's education. This is particularly important during periods of economic and political instability, when parents are tempted to pull girls out of school to help with household chores or with income-earning activities. Additionally, the literacy programs could be strengthened by linking them directly with the formal schools and involving literacy class participants in Parent Teacher Associations or multi-generational programs.

6.4.3 Participation in Politics

Most women in the sample were registered to vote in Year 1 when the study began. In the experimental group, the proportion of women who were registered to vote increased significantly from Year 1 to Year 3, while no significant increases were observed in the control group. However, reported registration varied from year to year, with decreases in Year 2 for some of the women. These inconsistencies across years could indicate that some of the women who had registered to vote in Year 1 mistakenly believed that it was necessary to re-register to vote every year and had not done so. If this were the case, there is a need for greater information dissemination about what is required for women to be eligible to vote. It is also possible that some women thought they were being asked if they had registered to vote "this year," or that they forgot they had registered, or that they had not been truthful when asked the question the first year. It is likely that all of these factors were at play.

6.4.4 Participation in Community Activities

Women's membership in community groups increased significantly in both the experimental and the control group over the three-year period. The highest increase occurred among women with high levels of literacy class participation, indicating that integrated literacy programs have an impact on women's participation in community activities. However, it is important to note that women's choices of community groups reflect, to a large extent, the focus of government and NGO-sponsored programs in Nepal. Not surprisingly, most women in the experimental and control group showed higher interest in economic, health, and forest user community groups than in advocacy and women's development groups. In order to increase participation in groups that address violations of women's rights in Nepal it is necessary for programs to better coordinate efforts and include those topics as a central part of their curriculum.

In addition to expanding the topics discussed in integrated literacy programs, the GWE-PRA findings suggest that programs must address the causes for lack of participation. Women in the experimental and control groups revealed that the most common reasons for not participating were "lack of time," "no group in the area" and "lack of interest." Local government and NGOs must improve the dissemination of information about the importance of women's groups in order to increase women's interest in participation and alter husbands' perceptions of those groups. The high percent of women in both groups who mentioned that no community groups existed in their area is an indication that more opportunities must be created for women to participate in community group activities.

Women's membership in community development activities increased significantly in all groups over time. The highest percentage-point increase occurred among women in the control group, which led us to conclude that participation in the integrated literacy programs is not responsible for women's increased participation in those groups. It is important to note that community development activities were not the focus of any of the integrated literacy programs in this study.

Likewise, themes such as wife beating and girls' trafficking were not discussed in great depth by BPEP or HEAL. The data suggest that girls' trafficking became a less visible problem among women in those programs. However, we do not know whether this represents a decline in trafficking in those districts or simply a decrease in the number of women acknowledging the problem.

6.5 Hypothesis 3

6.5.1 Literacy Skills

Women's performance on a 49-item literacy test was examined with respect to whether they were in the experimental or the control group. In addition, the role of other factors, such as district, level of class participation, enrollment in previous literacy classes, language spoken at home, SES and age were also considered.

Women in the experimental group scored significantly higher on the literacy exam at the beginning of the study (within two to four weeks of the start of the literacy classes) as well as at the conclusion of the study (in Year 3). Additionally, their improvements in literacy scores from Year 1 to Year 3 were significantly greater than for women in the control group. Hence, we concluded that participation in the BPEP or HEAL literacy program had a significant impact on their literacy skills.

Those districts with high levels of SES tended to score higher on the literacy exam than those with lower SES levels. However, SES did not appear to affect whether or not respondents showed *improvements* in their scores across the three years.

Women who spoke Nepali at home performed significantly better on the literacy test in all three years than those who spoke another language at home. Speaking Nepali at home had a small but significant impact on the extent to which women's literacy scores improved from Year 1 to Year 3. No strong relationship between age and literacy scores was found.

When levels of literacy class participation, SES, language spoken at home, participation in prior literacy classes and age were considered together, the factors contributing the most to improvements in literacy scores over the three years was level of literacy class participation. Literacy class participation explained about 4% of the variation in scores, followed by previous participation in literacy classes (which was negatively correlated with improvements in literacy scores). Prior participation explained about 2% of the variation, and language spoken at home explained only .02% of the variation in scores.

6.6 Implications for Policy

1. The GWE-PRA research has provided empirical evidence that the integrated literacy and basic education programs have a significant impact on women's social and economic development. The 13 percentage-point gain on the composite index used in this study to measure women's development is the result of:
   ? more than two decades of developing, testing and refining locally relevant curriculum materials;
   ? effective training programs; and
   ? support from the international donor community.

   Therefore, it is that essential continuing a strong support, commitment and effort be provided for these integrated literacy and basic education programs.

2. GWE-PRA research results revealed that areas of indicators in which the two programs have made substantial investment of resources (time, program focus, and training) have resulted in significant gains in women's social and economic development. Therefore, it is recommended that Government, donors, and NGOs prioritize their goals and target resources toward achieving these goals.

3. In examining factors contributing to the 13 percentage-point gain in social and economic, we found that certain areas of indicators were not sufficiently supported, and hence, did not significantly contribute toward development gains. Priority should be given to selecting areas that deserve greater attention in the next phase of program development.

   For example, consideration should given to investing resources in expanding the curriculum to include a focus on children's education. More specifically, we recommend that specific materials be incorporated that emphasize the importance of children's education, as well as ways in which women can become more involved with their children's education. Additionally, the HEAL and BPEP programs could be strengthened by linking them directly with the formal schools and involving literacy class participants in Parent Teacher Associations or multi-generational programs.

Furthermore, we suggest that increased emphasis be placed on income-earning activities either by adding additional components to the curriculum or by channeling participants who have completed these programs into programs such as WEEL, which are specifically targeted to increasing women's economic empowerment.

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APPENDIX 1
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APPENDIX 2
PROCEDURE FOR GROUPING RESPONDENTS ACCORDING TO LEVELS OF PARTICIPATION IN LITERACY CLASSES

HEAL basic classes run for six months and the BPEP basic-literacy classes run for nine months. It is estimated that even though the HEAL and BPEP programs operate for different lengths of time, they cover approximately the same amount of material. To account for this, the amount of literacy exposure for each participant was standardized by calculating a proportion of the program each participant completed in Year 1 and Year 2.

For example, a participant who completed three months of a HEAL basic-literacy program was calculated to have completed 50 percent of their program, while a BPEP participant who completed three months was calculated to have completed 33 percent. The proportion of the program completed was also calculated for post-literacy participants, by dividing the number of months completed by the total length of the program in which they had participated. At the time interviews were conducted in Year 3, participants were asked whether they were participating in a literacy program that year and if so, which program. However, no information was available as to how many months they participated, since not all of the programs were completed at the time of the interviews. Therefore, any of the women who had begun HEAL or BPEP classes in Year 3 were assigned a minimum value of 10 percent for that year. Total literacy exposure during the three-year period was calculated by summing the proportions across the three years. Participants were then grouped according to whether they had been exposed to "low," "medium," or "high" levels of literacy participation as follows:

Women who scored less than 0.5 (i.e., they completed less than half of the equivalent of a basic-literacy class over a period of three years) were considered to have low levels of literacy participation. This represents 1 to 231 hours of class time for BPEP participants and 1 to 129 hours for HEAL participants.

Women who scored 0.5 to 1.0 (the category ranged from those completed at least half of the equivalent of a basic-literacy course to those completed the entire basic-literacy course) were ranked as having medium levels of literacy participation. This represents 232 to 464 hours of class time for BPEP and 130 to 260 hours for HEAL.

Those who scored 1.1 to 2.1 (completed the basic-literacy class plus additional basic and post-literacy classes in Year 2 and/or in Year 3) were considered to have high levels of literacy participation. For those repeating basic-literacy classes in Year 2 or Year 3, this represents 465 to 930 hours of class time for BPEP and 261 to 520 hours for HEAL. For those in post-literacy classes in Year 2 or Year 3 (i.e., 65 percent of the participants in the high category) this was 465 to 776 hours for BPEP and 261 to 389 hours for HEAL.

APPENDIX 3
TECHNICAL NOTES FOR MULTIPLE LINEAR REGRESSION MODEL OF LITERACY CLASS PARTICIPATION BY PREDICTOR VARIABLES

To determine whether the model is a fair representation of the data, we examined the standardized residuals and outliers (extreme cases), and found that none of the absolute values of the standardized fell outside +3 or –3 standard deviations. Similarly, only 4% of the absolute values of the standardized residuals fell outside +2 or –2 standard deviations. Since one would expect 95% of the sample to fall within these two parameters, we concluded that the model is a fair representation of the data.

When the relationship between the independent variables was examined (see the correlation matrix on Table 3.4), several of these variables were found to be correlated with each other. For example, significant correlation between SES and other variables exists, as follows: language, $r^{2=}$.50 (p =.000); program affiliation, $r^{2=}$.10 (p =.003); age $r^{2=}$.30. However, collinearity diagnostics[104] indicate there is no multicollinearity (i.e., the variables are measuring different things).

Table 2.1 Descriptive Statistics for Final Model–Literacy Class Participation[a] by Program, SES, Language and Previous Literacy Class Participation

	Mean	Std. Deviation	N
Literacy Class Participation Ratio[b]	.89	.62	660
Program[c]	.50	.50	660
SES[d]	5.77	2.22	660
Speak Nepali at home[e]	.52	.50	660
Previous Literacy Class	.26	.44	660
Age at baseline	32.38	8.87	660

a Does not include women who were "forced out" of the program because the class closed down before its completion.

[b] This ratio is based on the total number of months completed over three years divided by the total number of months required to complete the program. Possible scores (for the experimental group) ranged from 0.10 to 2.10. A score of 0.10 represents participants who completed 10% of the basic-literacy class; a score of 1.0 represents participants who completed the basic-literacy class and a score of 2.10 represents participants who completed the basic-literacy class plus an additional class in year two and had enrolled in a class in year three at the time data were collected.

[c] The group with the highest mean cumulative participation level was selected coded as "1". Hence, HEAL=1 and BPEP=0. This coding in no way reflects either a "positive" or "negative" outcome associated with membership in either of the two groups.

[d] Possible SES scores ranged from 0-13.

[e] Yes=1 and No=0.

[f] Yes=1 and No=0.

---

[104] The average Variance Inflation Factor (VIF) value was close to 1 and no tolerance indicator was greater than 0.2.

Table 2.2 Final Model Summary[a] for Literacy Class Participation by Program, SES, Language and Previous Literacy Class Participation

Model	R	R Square	Adjusted R	Standard Error of the Estimate
1	.273[b]	.074	.073	.5976
2	.329[c]	.107	.101	.5884

[a] Dependent Variable: Literacy Class Participation Ratio (.10-2.10).

[b] Predictors: (Constant), Program (HEAL or BPEP).

[c] Predictors: (Constant), Program (HEAL or BPEP), SES (0-13, Attended literacy class before (0-1); Speak Nepali at home (0-1), Age at baseline.

Table 2.3 Correlations for Final Model–Literacy Class Participation by Program, SES, Language, Previous Literacy Class Participation and Age

	Literacy Participation Ratio	Program (HEAL or BPEP)	SES	Speak Nepali at Home	Previous Literacy	Age
			Pearson Correlations			
Participation Ratio	1.000	.273	.184	.136	.102	.058
Program	.273	1.000	.105	.061	.021	-.031
SES	.184	.105	1.000	.500	.128	.210
Speak Nepali at Home	.136	.061	.500	1.000	.089	.301
Previous Lit. Class	.102	.021	.128	.089	1.000	.014
Age	.068	-.031	.210	.301	.014	1.000
		Sig. (1-tailed)				
Literacy Class Participation Ratio	-	.000	.000	.000	.004	.041
Program	.000	-	.003	.060	.298	.210
SES	.000	.003	-	.000	.000	.000
Speak Nepali at Home	.000	.060	.000	-	.011	.000
Previous Lit. Class	.004	.298	.000	.011	-	.362
Age	.041	.210	.000	.000	.362	-

n=660

Table 2.4: Coefficients of the Regression Model for Final Model–Literacy Class Participation by Program, SES, Language and Previous Literacy Class Participation

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	.725	.033		22.26	.000
	Program	.338	.047	.273	7.271	.000
2	(Constant)	.406	.100		4.014	.000
	Program	.315	.046	.257	6.916	.000
	SES	.032	.012	.118	2.734	.006
	Speak Nepali at Home	.053	.054	.043	.982	.326
	Previous Literacy Class	.109	.053	.077	2.076	.038
	Age at baseline	.026	.003	.037	.959	.338

APPENDIX 4
TECHNICAL NOTES FOR MULTIPLE LINEAR REGRESSION MODEL OF CHANGE IN LITERACY SCORES OVER THREE YEARS BY PREDICTOR VARIABLES

When the relationship between the independent variables was examined (see the correlation matrix on Table 4.4 in Appendix 4), several of these variables were found to be correlated with each other. For example, significant correlation between language and other variables exists, as follows: literacy class participation ratio, $r^{2}=.19$ (p =.000); previous literacy class, $r^{2}=.13$ (p =.000). However, collinearity diagnostics[105] indicate there is no multicollinearity, and the variables are measuring different things.

Table 3.1 Descriptive Statistics for Final Model–Change in Literacy Scores Over Three Years by Previous Literacy Class, Participation Ratio and Language

	Mean	Std. Deviation	N
Literacy Score Change[a]	1.80	8.70	961
Previous Literacy Class[b]	.20	.40	961
Participation Ratio[c]	.68	.64	961
Speak Nepali at Home[d]	.46	.50	961

[a] Point change in literacy scores from year one to year three.

[b] Yes=1 and No=0.

[c] This ratio is based on the total number of months completed over three years divided by the total number of months required to complete the program. Possible scores (for the experimental group) ranged from 0.10 to 2.10. A score of 0.10 represents participants who completed 10% of the basic-literacy class; a score of 1.0 represents participants who completed the basic-literacy class and a score of 2.10 represents participants who completed the basic-literacy class plus an additional class in year two and had enrolled in a class in year three at the time data were collected.

[d] Yes=1 and No=0.

Table 3.2: Final Model Summary[a] for Change in Literacy Scores Over Three Years by Previous Literacy Class, Participation Ratio and Language

Model	R	R Square	Adjusted R	Standard Error of the Estimate
1	.142[b]	.020	.019	8.621
2	.244	.060	.058	8.450
3	.248[c]	.062	.059	8.445

[a] Dependent Variable: Change in literacy score (year one to year three).

[b] Predictors: (Constant), Previous Literacy Class (0-1, Literacy Class Participation Ratio (.10-2.10).

[c] Predictors: (Constant), Previous Literacy Class (0-1), Literacy Class Participation Ratio (.10-2.10), Speak Nepali at home (0-1).

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[105] The average Variance Inflation Factor (VIF) value was close to 1 and no tolerance indicator was greater than 0.2.

Table 3.3: Correlations for *Initial* Model–Change in Literacy Scores Over Three Years by Previous Literacy Class, Participation Ratio, Language, SES and Age

	Literacy Score Change	Partici-pation Ratio	Previous Lit. Class	Age	Speak Nepali at Home	SES
Pearson Correlations						
Literacy Score Change	1.000	.163	-.141	.-020	.059	.019
Participation Ratio	.163	1.000	.218	.042	.188	.256
Previous Lit. Class	-.141	.218	1.000	.007	.129	.176
Age	.-020	.042	.007	1.000	.272	.207
Speak Nepali at Home	.059	.188	.129	.272	1.000	.484
SES	-0.19	.256	.173	.207	.484	1.000
Sig. (1-tailed)						
Literacy Score Change	-	.000	.000	.267	.033	.274
Participation Ratio	.000	-	.000	.097	.000	.000
Previous Lit. Class	.000	.000	-	.417	.000	.000
Age	.267	.097	.417	-	.000	.000
Speak Nepali at Home	.033	.000	.000	.000	-	.000
SES	.274	.000	.000	.000	.000	-

n=960

Table 3.4: Correlations for *Final* Model–Change in Literacy Scores Over Three Years by Previous Literacy Class, Participation Ratio and Language

	Literacy Score Change	Previous Lit. Class	Participation Ratio	Speak Nepali at Home
		Pearson Correlations		
Literacy Score Change	1.000	-.142	.163	.050
Previous Lit. Class	-.142	1.000	.219	.127
Participation Ratio	.163	.219	1.000	.187
Speak Nepali at Home	.060	.127	.187	1.000
		Sig. (1-tailed)		
Literacy Score Change	-	.000	.000	.032
Previous Lit. Class	.000	-	.000	.000
Participation Ratio	.000	.000	-	.000
Speak Nepali at Home	.032	.003	.000	-

n=961

Table 3.5 Coefficients of the Final Regression Model–Change in Literacy Scores Over Three Years by Previous Literacy Class, Participation Ratio and Language

		Unstandardized Coefficients		Standardized Coefficients		
Model		ß	Std. Error	Beta	t	Sig.
1	(Constant)	2.421	.312	-	7.767	.000
	Previous Literacy Class	-3.064	.690	-.142	-4.439	.000
2	Constant	.727	.406	-	1.792	.073
	Previous Literacy Class	-4.024	.693	-.186	-5.804	.000
	Participation Ratio	2.768	.437	.203	6.336	.000
3	Constant	.438	.450		.973	.331
	Previous Literacy Class	-4.116	.696	-.191	-5.917	.000
	Participation Ratio	2.660	.443	.195	6.008	.000
	Speak Nepali at Home	.827	.559	.047	1.480	.139

APPENDIX 4

TECHNICAL NOTES FOR MULTIPLE LINEAR REGRESSION MODEL OF CHANGE IN HEALTH KNOWLEDGE COMPOSITE SCORES OVER THREE YEARS BY PREDICTOR VARIABLES

Table 4.1: Descriptive Statistics for Final Model–Change in Health Knowledge Composite Over Three Years by Previous Literacy Class and Literacy Class Participation Ratio

	Mean	Std. Deviation	N
Health Knowledge Score Change[a]	.901	1.95	965
Lit. Class Participation Ratio[b]	.68	.64	965
Year 3 Literacy Score[c]	16.87	14.96	965

a Point change in health knowledge score (0-9) from Year 1 to Year 3.

[b] This ratio is based on the total number of months completed over three years divided by the total number of months required to complete the program. Possible scores (for the experimental group) ranged from 0.10 to 2.10. A score of 0.10 represents participants who completed 10% of the basic-literacy class; a score of 1.0 represents participants who completed the basic-literacy class and a score of 2.10 represents participants who completed the basic-literacy class plus an additional class in Year 2 and had enrolled in a class in Year 3 at the time data were collected.

[c] Year 3 Literacy score (0-49).

Table 4.2: Final Model Summary[a] for Change in Health Knowledge Composite Scores Over Three Years by Literacy Class Participation Ratio and Year 3 Literacy Score

Model	R	R Square	Adjusted R	Standard Error of the Estimate
1	.150[b]	.023	.022	1.933
2	.167	.028	.026	1.929

[a] Dependent Variable: Change in health composite score (Year 1 to Year 3).

[b] Predictors: (Constant), Literacy Class Participation Ratio (.10-2.10).

[c] Predictors: (Constant), Literacy Class Participation Ratio (.10-2.10), Year 3 Literacy Score (0-49).

Table 4.3: Correlations for *Initial* Model–Change in Health Knowledge Composite Scores Over Three Years by Literacy Class Participation, SES Ratio, Previous Literacy Class, Age and Year 3 Literacy Score

	Health Know. Compos. Score Change	Participation Ratio	SES	Previous Literacy Class	Speak Nepali at Home	Age	Year 3 Literacy Score
			Pearson Correlations				
Health Know. Comp. Score Change	1.000	.151	-.016	-.029	.021	-.007	.141
Participation Ratio	.151	1.000	.257	.219	.178	.053	.523
SES	-.016	.257	1.000	.173	.477	.196	.345
Previous Lit. Class	-.029	.219	.173	1.000	.124	.027	.281
Speak Nepali at Home	.021	.178	.477	.124	1.000	.226	.313
Age	-.007	.053	.196	.027	.226	1.000	-.054
Yr. 3 Literacy Score	.141	.523	.345	.281	.313	-.054	1.000
Sig. (1-tailed)							
Health Knowledge Score Change	-	.000	.308	.186	.262	.411	.000
Participation Ratio	.000	-	.000	.000	.000	.052	.000
SES	.308	.000	-	.000	.000	.000	.000
Previous Lit. Class	.186	.000	.000	-	.000	.200	.000
Speak Nepali at Home	.262	.000	.000	.000	-	.000	.000
Age	.411	.052	.000	.200	.000	-	.045
Yr. 3 Literacy Score	.000	.000	.000	.000	.000	.045	-

n=964

Table 4.4: Correlations for *Final* Model–Change in Health Knowledge Composite Scores Over Three Years by Literacy Class Participation Ratio and Year 3 Literacy Score

	Literacy Score Change	Participation Ratio	Year 3 Literacy Score
	Pearson Correlations		
Literacy Score Change	1.000	.150	.140
Participation Ratio	.150	1.000	.523
Year 3 Literacy Score	.140	.523	1.000
	Sig. (1-tailed)		
Literacy Score Change	-	.000	.000
Participation Ratio	.000	-	.000
Year 3 Literacy Score	.000	.000	-

n=965

Table 4.5 Coefficients of the Final Regression Model–Change in Literacy Scores Over Three Years by Previous Literacy Class, Participation Ratio and Language

		Unstandardized Coefficients		Standardized Coefficients		
Model		ß	Std. Error	Beta	t	Sig.
1	(Constant)	.589	.091		6.485	.000
	Literacy Class Participation Ratio	.459	.097	.150	-4.721	.000
2	Constant	.493	.406		1.792	.073
	Previous Literacy Class	623	.693	-.186	-5.804	.000
	Literacy Class Participation Ratio	.011	.005	.085	2.283	.023

GIRLS' AND WOMEN'S EDUCATION POLICY RESEARCH ACTIVITY

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